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MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 61
No. 17

ESTABLISHED 1882

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Single Copy 15 Cents

In This Issue:

Increase in Industrial Power in the
South.

Co-operative Banking and Home-
Building.

Opportunities in the Natural
Resources of Mississippi.

Scope of the Operations of the
Newport News Shipbuilding
Company.

Alphabetical Index, Page 146.

Classified Index, Pages 140 to 145.

Classified Opportunities, Pages 94, 95 and 96.

BALTIMORE, MAY 2, 1912

CLINCHFIELD COAL

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LUMPY

"NEVER SHORT OF CARS"

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Clinchfield Coal Corporation
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You will find our prices and goods "RIGHT"
Send complete specifications.
Send for Metal sample plate **Erdle Perforating Co., Rochester, N. Y.**

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The design of the frame combines greatest strength and rigidity with convenience for handling dies and material. Adjustments are rapid, convenient and very accurate. All pressure is transmitted through solid metal. Slides are well gibbed. Built in ten (10) sizes, all in stock. Send for Catalogue No. 2F describing them.

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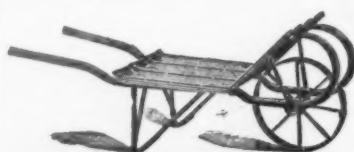
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Every Requisite of the Draftsman or Engineer

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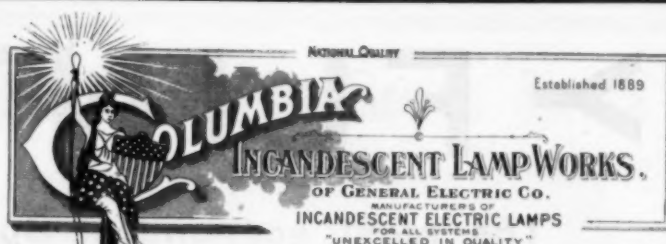
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We believe we have reached the acme of efficiency and economical service in the Columbia Mazda lamp; we know these lamps may serve you well.

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Established 1889 ST. LOUIS, MO.

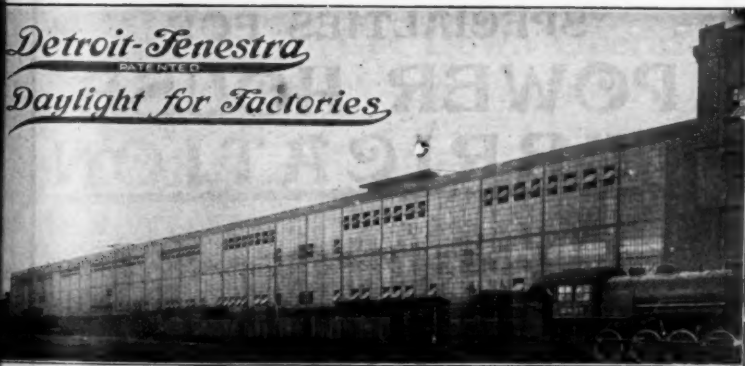
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New York Central Railroad Shops, Albany, New York

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is one of the first requisites of business success. A handsome exterior of plant is evidence of the high standard demanded in the business ethics of today.

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Solid Steel Windows

are fireproof and indestructible. After the initial expense Detroit-Fenestra costs nothing in renewals or repairs, and lessens lighting bills and maintenance charges.

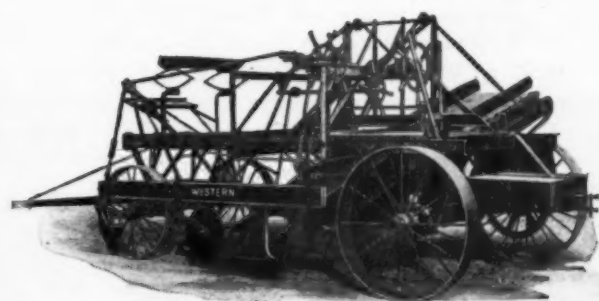
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Popular the country over, owing to their efficiency, durability, simplicity and economy.

Have been successfully used in all kinds of soil under the most severe conditions. Especially suitable for loading wagons, railroad building, canal, ditch and reservoir excavating.

Are a big saving over the old method. Made in three sizes—Junior, Standard and Giant.

Our printed matter will interest you.

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The most economical Sprocket Wheels on the market

Last several times as long as ordinary cast iron wheels and cost but little more.

Are accurately fitted to the original "Ewart" chains of which we are the designers and makers.



Trade Mark Reg. U. S. Pat. Office.

Life of Chain prolonged because wheels are not rapidly wearing away from the proper pitch diameter.

Write for Book 108.

The economy resulting from the use of these wheels appeals to all who appreciate durability and satisfactory service, and especially to those who wear out machinery rapidly.

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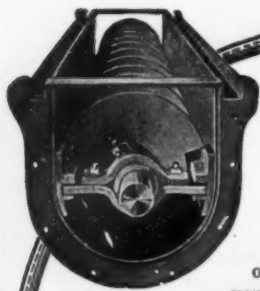
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Engines, Boilers and Pumps Repaired
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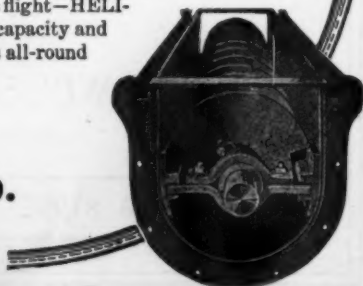
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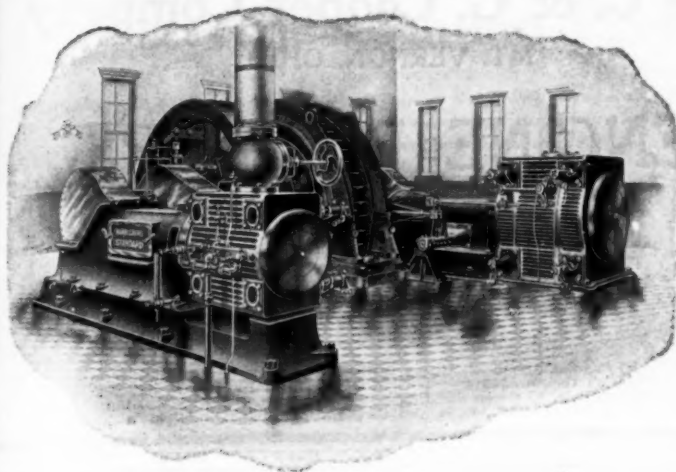
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GET THE ORIGINAL AND SUCCESSFUL BRAND

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Manufactured by

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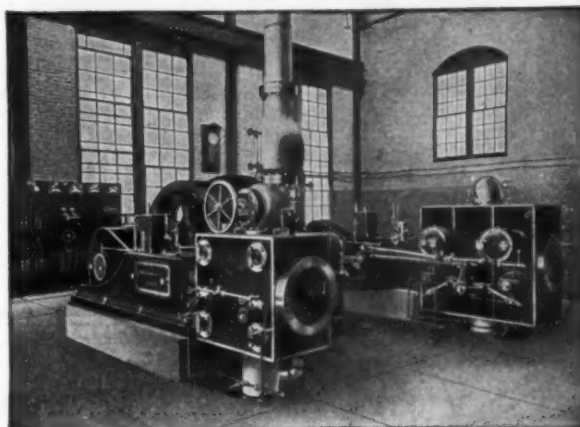
Harrisburg, Pa., U. S. A.

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Ball Engines for Electric Service

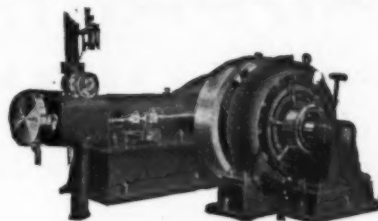


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Novo Hoisting and Pumping Outfits will enable any contractor to cut down his power costs to a minimum. The

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gives power cheaper than either steam or electricity. It eliminates the licensed engineer, expensive wiring, electric current and coal; occupies a minimum of space. The Novo is simple, reliable, very readily portable—the lightest engine for power developed.

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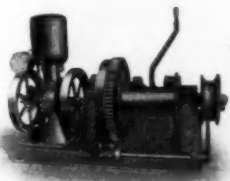
Novo Hoisting outfits have strong gears, liberal bearings, two clutches with a single lever, reliable foot control brakes. Like the engine itself, they are built for long, hard service. Novo Pumping outfits do the work of many men, quicker and better.

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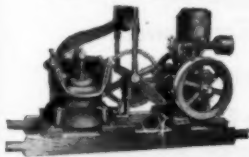
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We can offer an exceptional dealer's proposition in new territory. Write us for facts and figures.

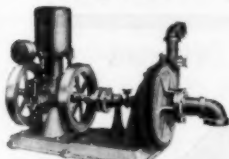
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TROUBLE



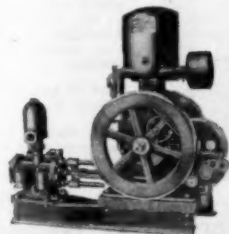
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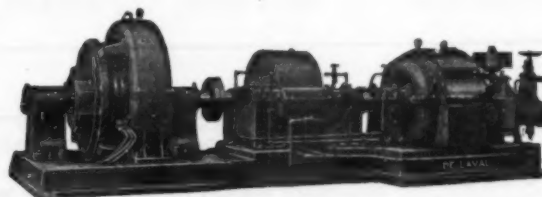
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Manufacturers of

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More Power Without More Boilers

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The new De Laval Multi-stage Single-geared Turbine is applied to driving direct-current generators of standard speed, which have many advantages in reliability and simplicity over the high-speed D. C. machines used with other turbines. It can also be used for driving centrifugal pumps or blowers, and can be arranged for any steam conditions.

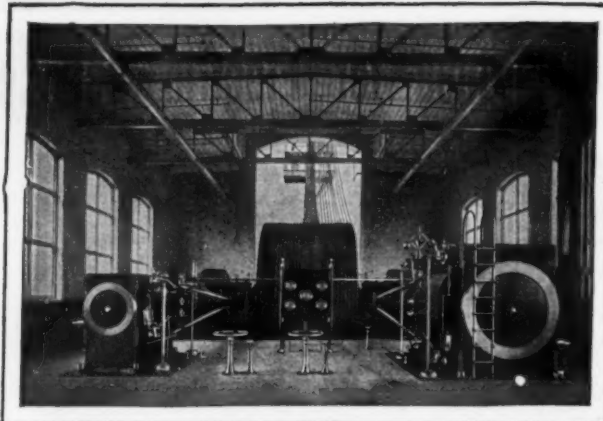
Write for our new "Treatise on Steam Turbines" P45.

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STEAM TURBINE CO.

TRENTON, NEW JERSEY

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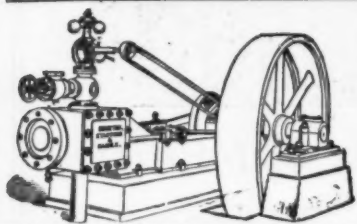
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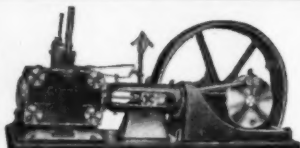
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We build a larger number of this type than anyone else in America. Shaft governor Engines.

BOILERS—large finely equipped works.
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Boilers of all Styles and Sizes
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Engine on exhibition in the Bourse, Philadelphia, Pa.

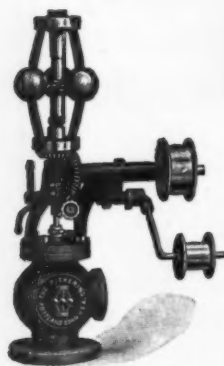
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ENGINES—TURBINES—CONDENSERS



For Steam Engines, Turbines,
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"THE GOVERNOR WITHOUT JOINTS"

Directness of Action Gives
 Greater Efficiency Maximum Durability

BECAUSE—

Absence of joints not only insures closer regulation when installed, but equal efficiency under continued duty, for lost motion cannot result with absence of joints. Stability in Action and Durability in continued duty effects economy, whether Electric Light Service, Saw Milling, or Dredging and Ditching.

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The Akerlund Bituminous Gas Producer

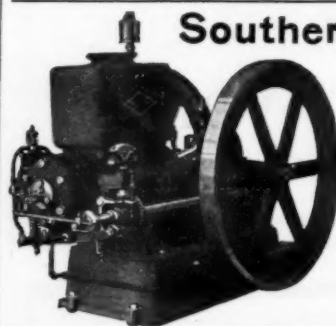
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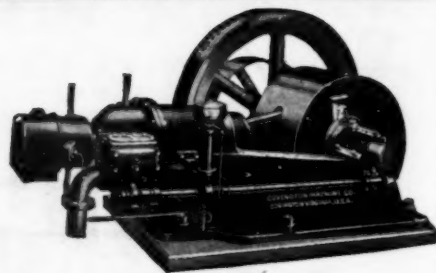
We make an improved heavy duty gasoline engine of all sizes for all purposes.

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Southern Engine & Boiler Works
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ASK YOUR
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Main Office and Works: Covington, Va.

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Schofield Engines and Boilers

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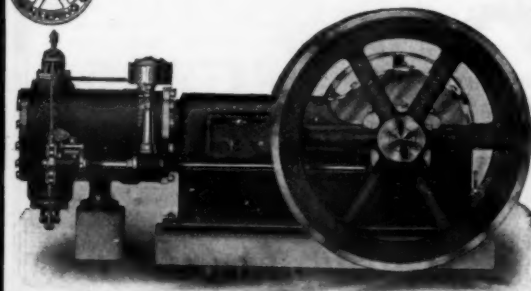
For Immediate Shipment, Portable Boilers and Engines, which are built for heavy duty. If you are contemplating the purchase of new Boilers and Engines, it will pay you to write us.

We are manufacturers of Boilers, Engines, Towers, Tanks, Standpipes, Self-supporting Steel Stacks, Plate and Sheet Iron Work, Saw Mills, etc.

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 BRANCH OFFICE: 307 W. Trade Street, Charlotte, N. C.



The Gas Engine That Is Different



The engine with enclosed dirt-proof bed and crosshead. Unexcelled for cotton gins and power plants. Perfect speed regulation. Automatic lubrication. Adjustable ignition.

Send for descriptive bulletin No. 27.

Most efficient and best regulating engine.

Bogart Gas Power Engineering Co.
 BUFFALO, N. Y.



Electric Lighting Plants with a Storage Battery

The use of a storage battery in connection with electric lighting plants offers many advantages. A 24-hour lighting service can be secured without the necessity of a continual running of an engine, as a battery can be charged during periods of light loads and will then furnish light during the time the engine is not running. The use of a battery also insures steady light, free from flickering. The battery guarantees continuous service, as it will furnish current for lighting should an accident happen to the engine or generating apparatus.

The "Chloride Accumulator"

is used by the large Central Stations, Electric Railways, Telephone and Telegraph Companies and by the U. S. Government. It is the most widely used battery for electric lighting service.

Let us give you full information about a storage battery adapted to your particular requirements.

THE ELECTRIC STORAGE BATTERY CO.

1888

PHILADELPHIA, PA.

1912

ATLANTA SALES OFFICE, CANDLER BUILDING

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THE PRIMM OIL ENGINE

OPERATES ON
Crude, Fuel, Gas or Solar Oils, Distillate,
Kerosene or
Gasoline.



Two cycle type.
Steady as a clock.
Perfectly dependable
for any purpose.
Write for catalog and
name of nearest re-
presentative.

The Power Mfg. Co.
Cor. Greenlawn Ave. and C. & E. R. R.
LIMA, OHIO

That for week—Our engines are built to keep running.

THE MIETZ & WEISS OIL ENGINES

Stationary 2 to 400 H. P. Marine 2 to 400 H. P. 150,000 H. P. in operation.

Operate on Kerosene, Cheap
Fuel Oils, Crude Oil, Alcohol
and Distillate, Etc.

Direct connected to
Generators, Pumps, Hoists, Etc.

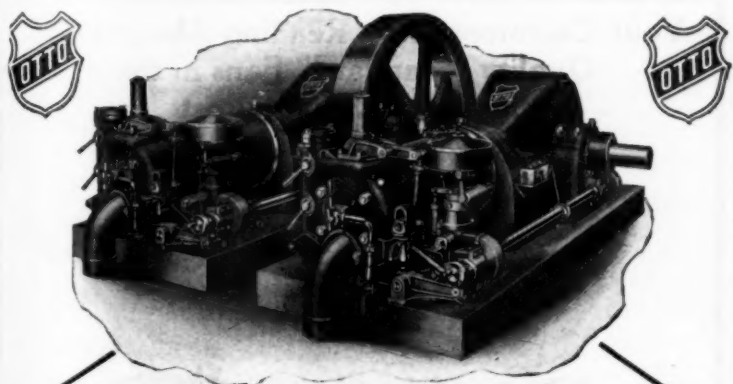
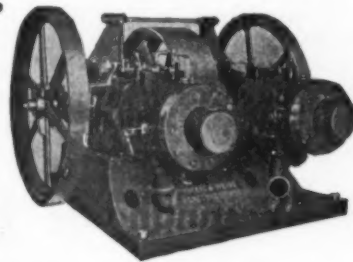
Thousands in use in all parts
of the world.

Send for Catalogue.

A. MIETZ

129 MOTT STREET, NEW YORK

100 H. P. engine using three-cent-per-gallon fuel saves over gasoline at nine cents per gallon \$1800 per year, which represents a capital of \$36,000 at 5 per cent. interest. The same saving can also be had over a steam plant of the same capacity.



The Otto Twins

are introduced to you as the latest type of Otto Gas Engine construction. These throttling governor engines are built in single cylinders in the following sizes:

50, 60, 80, 100, 110, 125, 150 H. P.

IN TWIN CYLINDERS:

100, 120, 160, 200, 220, 250, 300 H. P.

Otto Bulletin No. 10 contains much information of practical value to every manufacturer. You should have the last word in gas engine practice.

If interested in smaller units, request copy of Bulletins 3 and 7, all free upon request.

The Otto Gas Engine Works

3221 Walnut St., PHILADELPHIA, PA.

JOLIET FORGE COMPANY, Joliet, Illinois

Steam Shovel
Corliss Engines
Mining Machinery
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Gas Engine

FORGINGS

Send us your blue prints for our quotations.



YOU BUY RIDGWAY ENGINES and GENERATORS under definite guarantees as to operating characteristics, temperature rating, etc.

We assume responsibility for the entire unit, subjecting it to a

thorough running test before leaving our works.

Accordingly you take no chance in buying a unit designed as a whole, and where the essential functions of the engine correlate with those of the generator.

We regard this point of great value, and with many users of Ridgway Units had much to do in their selection.

In assembling the unit, the drilling for the holding down bolts of the generator frame are marked off on the pads of the generator base,

thus eliminating any possibility of error on this score. Every armature or rotor is forced upon the engine shaft by special hydraulic machinery. Doing this work at destination is very unsatisfactory.

In general appearance Ridgway Units bear a uniformity of design that is pleasing. They are well finished, clean, and operate quietly. These are points worthy of consideration.

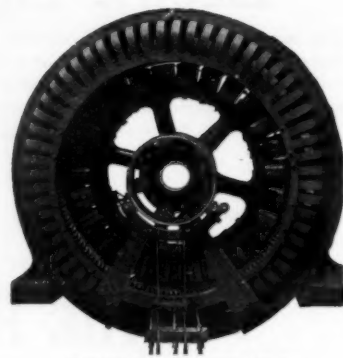
In steam economy, electrical and mechanical efficiency, close regulation and reliability, they have no equal.

Write for Bulletins 19, 20 and 21 Z.

Ridgway Dynamo & Engine Co.

Ridgway, Pa.

Drive your compressors with Westinghouse Synchronous Motors and reduce your power expense



Westinghouse Synchronous Motors

In some compressor installations, direct-connected Westinghouse self-starting synchronous motors have actually paid for themselves in a few years by the reduction they caused in the power bills. In a few cases it can even be figured that the power required to drive the compressors cost nothing.

How is this done? These motors will raise your power factor. This means, if you make your own power, directly increasing the capacity of your pres-

ent generators, transformers and transmission lines, improving the voltage regulation, and raising the efficiency of your entire installation.

Many central stations give better rates for a high power factor installation than for a low one.

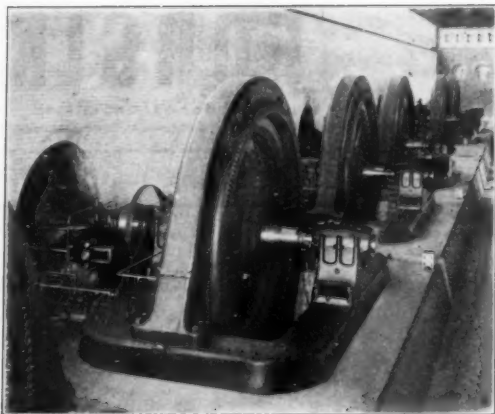
Then, too, these motors require the least floor space, cost less to install than other types, and have the highest efficiency.

Their first cost is not higher than for motors of other types, and in very large sizes it is less.

Write to Dept. 45 today for complete information regarding Westinghouse Synchronous Motors and their application.

Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

Sales Offices in 45 American Cities



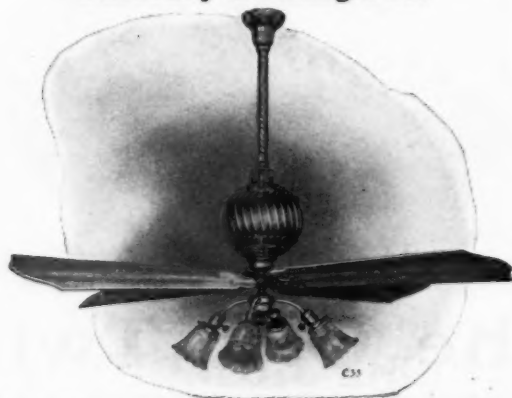
Five Alternating Current Generators of 4000 KVA.,
driven by water power, Sanitary
District, Chicago.

This is one of many big installations where C-W electrical machinery has been installed and is adding to its high reputation day by day.

CROCKER-WHEELER COMPANY

Ampere, N. J., Birmingham, Boston, Chicago, Cleveland, Denver,
Detroit, Newark, New Haven, New York, Philadelphia,
Pittsburgh, San Francisco, Syracuse.

Your Customers Are Reading About High-Quality "Standard" Fans in the Saturday Evening Post



Some dealer in your locality is going to reap this year's harvest of electric fan sales created by our big Saturday Evening Post advertising campaign. If YOU are the dealer who is ever on the alert for bigger business, we hope you are the one who gets the business.

**Robbins & Myers
"STANDARD" Fans**

DIRECT OR ALTERNATING

A fan for every purpose and every size and style.

Not only are "Standard" Fans the best built fans in existence, but they are also the best advertised. We sell them FOR our dealers through vigorous advertising.

Communicate with our nearest branch or direct with our factory for more facts and particulars of our Fans and dealer's proposition.

**THE ROBBINS & MYERS COMPANY
SPRINGFIELD, OHIO**

BRANCHES: New York Chicago Boston Philadelphia St. Louis Rochester
We also manufacture small motors, both D. C. and A. C., for all purposes.

EFFICIENCY

LETTER No. 8

The term EFFICIENCY is as indefinite in real meaning when applied to storage batteries as is "PREDESTINATION" in matters religious.

Ordinarily, PRACTICAL EFFICIENCY means ability to CONTINUE useful work over a protracted period, with minimum deterioration and expense. Inasmuch as a person's time is worth money, the more time one has to spend taking care of a piece of apparatus, the more it is costing, in addition to the depreciation, and the less the PRACTICAL efficiency of the device to him.

We are told in one breath that lead batteries have 75 per cent. efficiency, and in the next, "Give the battery a prolonged overcharge every two weeks. This overcharge should continue at about 60 per cent. of the eight-hour rate until free gassing of the negative plates has continued for an hour." Again, "Cells which stand a considerable time unused—say as long as 45 days—should be overcharged as directed. It is best to give them a slight charge and discharge about once a week if practicable."

EDISON BATTERY instructions suggest that they be overcharged at the end of thirty days and sixty days of use and thereafter every two months. Overcharging in this case means prolonging the charge for several hours more than the normal charging time a few times a year. This amounts to very little as compared to overcharging every two or three weeks.

The lead battery claims 75 per cent. watt hour efficiency. It would be interesting to know to what account the current wasted on these overcharges, which performs no useful work other than acting as a "tonic," is charged up.

Puts one in mind of a stereotyped regular contract, PLUS EXTRAS.

Practical folk will agree that EFFICIENCY means the greatest amount of work done in a year or in five years, with a minimum of expense. EVERYTHING must be counted.

This subject is one that can be best expressed in parables:

A windmill salesman comes along and sells to an unsuspecting farmer a perfectly good windmill and a new kind of TANK. The farmer has learned to look upon TANKS as containers of water, or whatever is pumped into them, for its storage until used, when and how he desires.

The outfit arrives and is installed by the windmill men. The farmer pays his money and sits down to peruse the forty-page book of "Directions and Rules for Operation" he was handed when the transaction was closed. He reads:

1. Don't drain ALL the water from the tank at ANY time except as below specified.
2. Never allow water to be pumped into the tank until it is at least two-thirds empty.

3. Then start windmill RIGHT AWAY and don't let it stop pumping until the tank is full.

4. Never let tank temperature rise above normal.

5. Go over all the rivets of the tank once a week, using a CADMIUM hammer, to determine their condition.

6. Buy a water meter, connect it to the tank once a week, and see if the water is flowing properly; if not, pump water in, allowing it to overflow until it does run out properly.

7. If you are called away for over forty-five days, and don't use the tank, pay someone to come around every two weeks, start the windmill, and pump water into it. It is better to let some of the water run out before you do so.

8. If tank is to remain unused two months or longer, send for a boilermaker and his BLOW TORCH, drain the tank, remove all the rivets, take all the plates of the tank apart, wash them thoroughly, and store them away.

9. If the plates have swelled, hire a road roller or a cotton press to squeeze them back to thickness.

10. When you come back and want water, send for your boilermaker and his blow torch, reassemble tank, using new rivets, allow tank to overflow for some time before using the water.

11. Be sure your main pipes from tank do not burst at any time, because if you remove the water from the tank too quickly, it will buckle the plates and ruin it.

12. Be sure the windmill never pumps water into the tank too fast, as this will injure the tank.

13. Every twelve or eighteen months remove all sediment, send for your boilermaker and his torch, remove all rivets, take the tank apart, clean all the parts, reassemble, using new rivets.

14. Never allow the tank to be filled when the temperature of the same is above normal.

15. Similarly, never use water from the tank when the temperature of tank is above normal. Your convenience and necessity is of secondary consideration.

16. If you do not have use for all the water your mill pumps, better let two-thirds run out about once every month and refill the tank.

17. Filling and using tank causes the water to change its density, so that you must buy a HYDROMETER and test said water once a week. If reading of the hydrometer is .05 from standard density, add chemicals or pure water to bring it right.

The farmer's crops suffer, but he sticks manfully to his task. Finally, after about the 300th time water has been pumped into the tank, he happens to glance skyward and notices a flock of large black birds soaring overhead. He has performed an autopsy!

He tears out the tank, uncouples the windmill and goes back to the well bucket.

About this time a drummer comes along from another windmill and tank manufacturing concern. The dogs are unleashed! But he waves a Guarantee flag of truce, and THIS time the farmer asks first for "Directions and Rules for Operation" of his particular kind of tank.

He finds:

1. Let tank run over a little while when you have used it for thirty and sixty days; thereafter about once every two months.
2. Put some water into the little receptacle we furnish, and every now and then turn the faucet of this little device until the bell rings.
3. Keep the exterior of your tank clean.
4. Forget the tank the rest of the time.
5. If, at the end of four years' use, the tank is incapable of showing its original rated capacity, we will repair or replace it free of charge.

THE FARMER GRADUATES FROM THE WELL BUCKET FOR GOOD.

Do you think that the first salesman could have gotten within a mile of that farmer if the second had arrived first with his "Directions for Operation" referred to in his catalogue?

Before purchasing **any** piece of apparatus, it is a wise plan to ask the Manufacturers for a copy of the Instructions on which the Guarantee is based.

It is then a good plan to pay a lawyer a few dollars to tell you whether or not the guarantee MEANS anything.

Then, with a full realization of the duties you must perform, it is up to you to figure whether it will pay you to spend **more** money for a device that will **last**, stand considerable neglect, and **give you great peace of mind**, or whether you wish to pay less money originally, face a large deterioration charge, figure your own time at its value, or insure against the probability of the man to whom you assign the duty of caring for the car, deciding he knows more about storage batteries than the manufacturer, and compromising by doing nothing at all.

I wish to especially call your attention to the fact that the EDISON STORAGE BATTERY can be recharged at ANY TIME WITHOUT DETRIMENT, irrespective of the energy which has been taken from it.

It can also be taken from charge and put on discharge, regardless of whether it has been fully charged or not.

The EDISON STORAGE BATTERY may be charged at four times its normal rate for fifteen minutes, or three times its normal rate for thirty minutes, or twice its normal rate for one hour.

This is an exceedingly valuable feature, not possessed by other batteries, without detriment to them.

For instance, a truck with a capacity of fifty miles per charge of EDISON BATTERY comes in for the dinner hour. While standing idle, it is put on charge at twice the normal charging rate. By the end of the dinner hour, from fifteen to twenty miles capacity has been returned to the battery.

This feature also removes a large load from the Superintendent of Delivery during the rush or holiday season. By "boosting" the battery each time the truck comes in for a load it can be operated day and night with only an intermission of a short time to enable the cells to be replenished with water by means of our electric filling device. I will tell you more of this later.

Respectfully,

MILLER REESE HUTCHISON,
Chief Engineer to and Personal Representative of
Mr. Edison.

(To be continued next week.)

Edison Storage Battery Company

151 Lakeside Avenue,

ORANGE, N. J.

Dictated to the Edison Dictating Machine

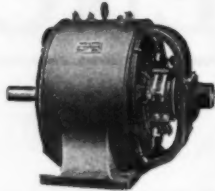
ECONOMY FOR MANUFACTURERS

Power just how, when and where you want it.

ADJUSTABLE SPEED MOTORS

The modern way of equipping your factory. Economy for you, and cleaner working conditions for your employees. Investigate now. Write for Bulletin 371M.

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**Incandescent Lamps**

Unexcelled for Life, Brilliance or
Uniformity

Motors and Dynamos

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MOLONEY TRANSFORMERS

MOLONEY ELECTRIC CO., ST. LOUIS, U. S. A.

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HEADQUARTERS

FOR ALL THINGS ELECTRICAL

At a Little Less Than You Pay Elsewhere Prompt Service

EE ELECTRIC COMPANY

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**Robbins & Myers
"STANDARD" Motors**

Direct Current 1-30 to
20 H. P., Alternating
Current 1-30 to 1/4 H.
P., Small Generators,
Motor-Generators,
Dynamotors, etc.

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1 a burning hour 1
100
candle power
Pintsch Mantle Light

**THE SAFETY CAR HEATING
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2 RECTOR ST., NEW YORK

WE HAVE MOVED

TO OUR NEW BUILDING
221-3 SOUTH SALISBURY STREET
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AND AWAIT YOUR ORDERS

Electrical Engineering & Contracting Company

The Western Gas Construction Co.
FORT WAYNE, IND.

"Ionic" Lamp Posts

FOR ELECTRICITY OR GAS,
Write for Particulars.

A small defect
may cause an
explosion if not
repaired in time

Maryland Casualty Co.
Baltimore and North Streets
BALTIMORE
Surplus and Reserves for Policyholders over
\$5,500,000.00

Our large corps
of inspectors are
men of long
experience and
ability

AGENTS

EVERYWHERE

Inspections
made regularly,
promptly and
thoroughly

Electricity in the Box Shop Pays

Swing Saw Changed From
Belt to G-E Motor Drive

Carefully consider these advantages of individual motor drive which have been realized in box shops:—

Machines located without reference to power, allowing direct routing of material, more production from a given space and more room in which to handle trucks.

More machines in a given space than with belt and lineshaft drive.

Planer and sticker cutters driven at highest productive cutting speed. Feeds driven by variable speed motors, the speed varying with the class of work.

Each machine always running at full productive capacity, without regard to adjacent machines, reducing pro rata labor cost to lowest figure.

Absence of overhead belting, countershafts and hangers which leaves entire headroom clear and unobstructed (easy to light, to clean and keep clean, easy to ventilate and free from dust) and affords ample facility for locating dust collector or automatic sprinkler systems.

Separate departments may be isolated for fire protection, and a recording meter will show exact power cost for each.

General Electric Company Motors

assure the above advantages by their absolute dependability of operation under ordinary loads and reasonable overloads.

You will be interested in our bulletin No. 4785 to be had for the asking.

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Largest Electrical Manufacturer in the World

Principal Office: Schenectady, N. Y.

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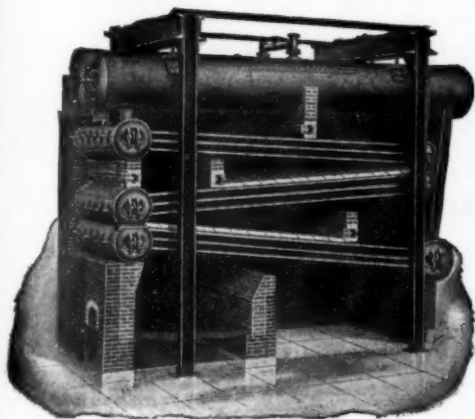
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A STEAM PRODUCER VOGT WATER TUBE BOILER



As a satisfactory, efficient steam producer, our water tube boiler stands out among the different makes of boilers throughout the country.

Complete combustion. Arrangement of tubes gives the water very rapid circulation. Steam capacity

greatly enhanced by the hot gases outside the tubes.

Many other features of interest to the boiler users. Let us send catalogue.

Henry Vogt Machine Company

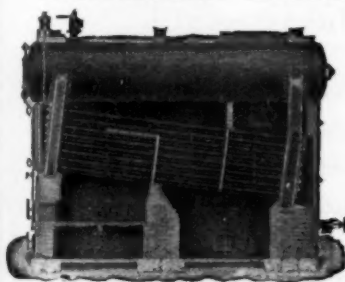
Louisville, Ky.

The Modern Boiler For The Up-To-Date Plant

GEARY WATER TUBE BOILER

The construction of the headers and drums in the "Geary" is such as to permit of unusually large water areas, which reduce to a minimum the usual contraction of circulating areas so common in many types of water tube boilers. This feature permits the "Geary" boiler to be

readily forced to maximum capacity and avoids the unsteady water level under forced firing so commonly experienced. The arrangement of drums permits a large liberating surface and steam storage capacity. If you want a boiler, you need a "Geary." Write for booklet.



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MANUFACTURERS OF HIGH-GRADE

BOILERS

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Write us for Prices before placing your order.

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PORTABLE AND HORIZONTAL TUBULAR
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**BOILERS TANKS
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Pumps, Heaters, Injectors, Engine
Supplies, and repairs for Mills,
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LOMBARD IRON WORKS, Augusta, Ga.

SELLERS INJECTORS

—FOR—

Locomotive

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Stationary Boilers

Interchangeable with other forms

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THE GEM CITY BOILER CO.

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Manufacturers of **TUBULAR BOILERS** of every description

STEEL TANKS any size and for any purpose

RUSSELL WATER SOFTENERS

AND GENERAL STEEL PLATE CONSTRUCTION

EASTERN REPRESENTATIVE

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E. KEELER COMPANY, Established 1864

Ask for New Catalogue.

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WATER TUBE BOILERS

All Wrought Steel Construction.

**TUBULAR AND INTERNAL FURNACE
BOILERS**

BOSTON PHILADELPHIA CHICAGO
NEW YORK PITTSBURGH RICHMOND

THE CASEY-HEDGES CO. Chattanooga, Tenn.

Water Tube

Marine

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BOILERS

SPECIAL PLATE AND TANK WORK

Offices—No. 719 Hennen Bldg., New Orleans, La.; Praetorian Bldg., Dallas, Texas.
Main Offices and Works—Chattanooga, Tenn.

HARTLEY BOILER WORKS

BUILDERS OF

HIGH-GRADE

BOILERS

Stand Pipes, Self-Supporting Stacks, Tanks, Towers, all kinds of Structural and Plate
Iron Work, Boiler Fronts, Grate Bars, Kilo Wheels, all kinds of Castings made to order.
MONTGOMERY, ALA.

THE BABCOCK & WILCOX COMPANY

85 Liberty Street, NEW YORK

Babcock & Wilcox—Stirling—Rust

Water Tube Steam Boilers

STEAM SUPERHEATERS

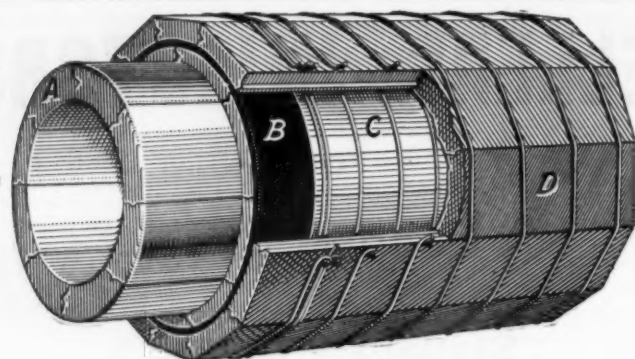
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WORKS—BAYONNE, N. J.

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A—Inner Shell, 2 inches thick.
B—Asphaltum Packing.

C—Dead Air Space.
D—Outer Shell, 1 inch thick.

Cover Your Steam Pipes

WITH WYCKOFF'S IMPROVED

CYPRESS COVERING

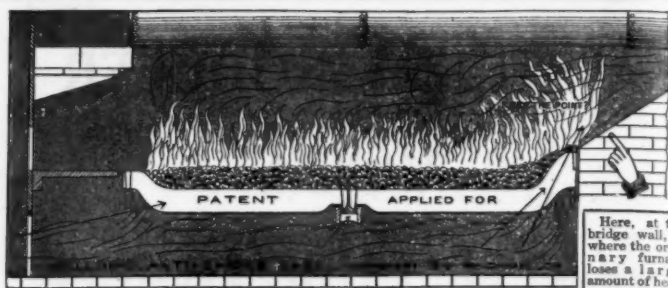
Made of Gulf Cypress, the wood eternal

Not affected by wet and dry conditions common to steampipe trenches. Will not rot. Lasts twice as long as Pine Casing. Absolutely water and steam tight. Each shell is wound with heavy galvanized wire. Coated all over with the best known preservative—Hydrolene B.

Let us answer your questions and tell you all about it. Booklet on request.

A. WYCKOFF & SON COMPANY

Elmira, N. Y.



Here, at the bridge wall, is where the ordinary furnace loses a large amount of heat.

The Greatest Aid to the Fireman

Mellor's "Anti-Smoke Bars" are needed in every power-plant as best aid to the fireman. No amount of care and skill can remedy defects in burning fuel, for which these bars provide.

The depressed bars increase the space in the furnace, providing for a thorough mixture of the gases and air. Moreover, there is a greater chance for air to enter at the vital points—to burn the gas and extract the heat before it escapes up the chimney.

Mellor's "Anti-Smoke" Bars have been designed to give the ordinary furnace the opportunity for complete combustion. If your furnace is smoking, they will pay you handsomely. Write for information.

Read this Guarantee: If after twenty-eight days' use the smoke nuisance isn't eliminated, the boiler capacity increased 15 to 20% and at least 15% of the fuel saved, we ask no payment for Mellor's Bars.

ONE USER'S EXPERIENCE

THE JESSUP & MOORE PAPER CO.

Delaware Mills

Mellor Furnace Engineering Co.,
Philadelphia, Pa.

Wilmington, Del., June 30, 1911.

Gentlemen:

The eight boilers we have equipped with your "Anti-Smoke" Bars are giving us great satisfaction. They do all you claim for them, and are well named "Anti-Smoke" Bars, for the reason that there is practically no smoke coming from the stacks at our mills where the boilers are installed with your bars.

Fires keep clean, the coal does not clinker as it did on the other bars we had in use. We find that (although we have always had a very efficient steam plant) the adoption of the "Anti-Smoke" Bars saves coal as compared with the dumping and stationary grates that we threw out to install yours.

Yours very truly,
A. B. AYERST, Supt.

Mellor Furnace Engineering Co., 608 Chestnut St., Philadelphia, Penna.



ARE YOU A COAL WASTER?

Answer yes, if your furnace or steam heater pipes are not covered with ASBESTOCEL, the ideal covering for all kinds of Heating Pipes. Contract work a specialty. Let us explain.

SOUTHERN PIPE COVERING CO. - - RICHMOND, VA
Asbestos Pipe Covering, Packing and Roofing.

THE PRATT & CADY CO.

HARTFORD, CONN.

Has established its own Branch Houses
and solicits your orders direct.

ALL "P & C"

BEAR THIS



PRODUCTS

TRADE MARK

It stands for highest quality and best workmanship at
reasonable cost.

Insist on PRATT & CADY Valves

Hydrants Steam Traps Cocks

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FOSTER SUPERHEATERS

**Change a Losing Plant
to Paying Investment**

No steam plant can reach its maximum of fuel economy without the use of superheaters—a broad but true assertion. Often by installing our superheaters a wasteful plant running at a loss may become a paying investment. Boilers not designed for high pressure or old boilers can be fitted with them and rendered serviceable.

The Foster Superheater has many advantages in the way of saving fuel, of increasing efficiency of engines, boilers, pumps, etc., and of general economy, and we want the opportunity to lay its merits before all steam plant owners.

Power Specialty Company

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HOPPES STEAM SEPARATORS

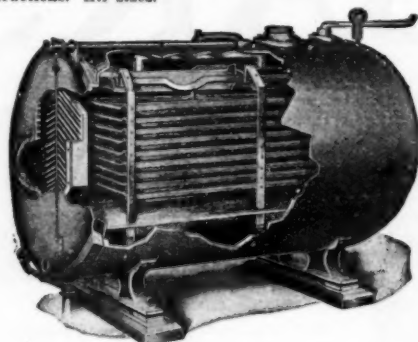
Will not only deliver 99% dry steam to your engine, but their large receiver capacity will take care of sudden flushes of water and afford ample steam storage for use during sudden "peak loads." All sizes and types to suit requirements.



HOPPES FEED-WATER HEATERS

Conserve the Fuel Pile—Protect Boilers
and Save the Dollars

The extra large heating and lime-catching surface, and the method of bringing the steam into direct contact with the water flowing in thin films, are the reasons why Hoppes Heaters give the highest efficiency and economy where others fail. Steel and Cast Iron Constructions. All sizes.



HEATER—CAST IRON CONSTRUCTION

Live Steam Feed-Water Purifiers—Oil Eliminators—Cast Iron
Exhaust Heads

ILLUSTRATED CATALOGS FREE

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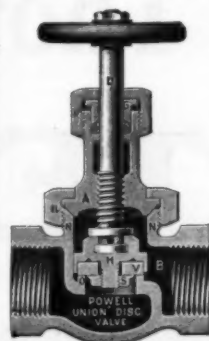
DID YOU EVER TRY A POWELL UNION DISC VALVE?

You have seen it advertised everywhere. You probably have thought about it? You may admit it looks good on paper? BUT—do you know it to be good from your own test?

Notice the construction of the bonnet and body-neck on the POWELL UNION DISC VALVE—see that coned and ground joint between A and N, secured by union nut "a." This connection is tight under any ordinary steam or hydraulic pressure, and does not require the use of red lead or other cementing material to make it so.

The Powell Union Disc Valve will give YOU as good service as it gives to thousands of other users.

Look for the Trade-Mark.



THE Wm POWELL CO.

DEPENDABLE ENGINEERING SPECIALTIES

CINCINNATI



The Otis Tubular Feed Water Heater

Oil Separator and Purifier

Is guaranteed to deliver the water to the boiler at boiling temperature (210 to 212 degrees). It will also extract the oil from the exhaust, so that the steam after passing through the heater may be used for other heating purposes and the condensed water returned to the boiler without any additional elimination.

Give the Otis a trial, and if you don't find it satisfactory we will pay the freight and carriage both ways.

The Stewart Heater Co., 3 Norfolk Ave. Buffalo, N. Y.

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MANUFACTURER OF

CORLISS VALVE STEAM TRAPS.
STEAM SEPARATORS.
EXPERTS IN REBORING STEAM
ENGINE CYLINDERS, PUMPS AND
AIR COMPRESSORS.

TURN OFF AND CROWN ANY SIZE FLY-
WHEEL ON ENGINE SHAFT.

Pig Barometer and Catalog Sent You
by Asking.

200 SOUTH THIRD ST.
ALLENTOWN, PA.



WE CANNOT AFFORD

space enough every week even to only enumerate the good points of the

BLAKE-KNOWLES OPEN FEED WATER HEATER

unless we increase its costs to you. That would be undesirable and moreover it is unnecessary, for if you want to know what those good points are, why they are good, and how they are obtained, you have only to say—

Send Bulletin BK847-29.

The Blake & Knowles STEAM PUMP Works

Works: East Cambridge, Mass. New York Office: 115 Broadway

B165.1

FUEL MONEY TIME BOILERS

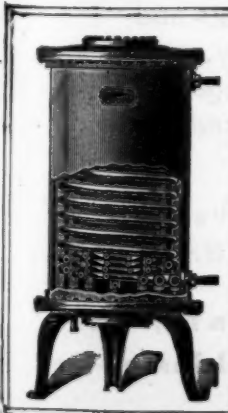
Would you save them?

THEN USE A

NATIONAL FEED-WATER HEATER

It delivers water to the boiler at 200° to 212° Fahrenheit by utilizing your exhaust steam. Its value must be clear to everyone who uses or is acquainted with steam boilers. Let us send our catalogue.

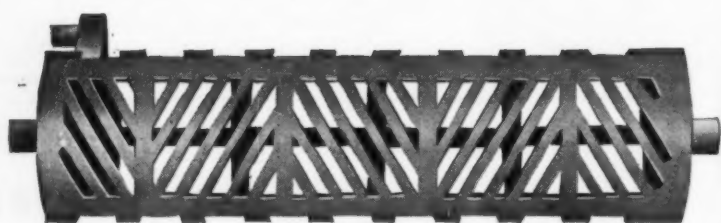
The National Pipe Bending Company 97 Lloyd Street New Haven, Conn.



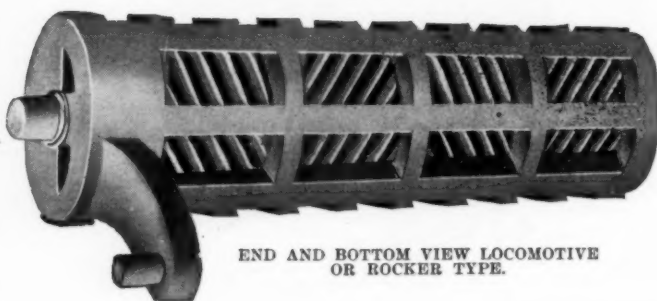
*Decrease Your
Fuel Bill*

*Increase Your
Steam Supply*

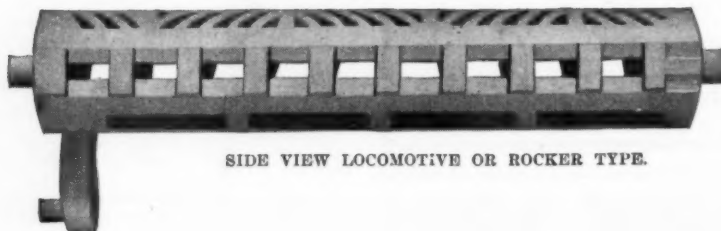
Install Thomas Elliptic GRATE BARS



TOP VIEW LOCOMOTIVE OR ROCKER TYPE.



END AND BOTTOM VIEW LOCOMOTIVE
OR ROCKER TYPE.



SIDE VIEW LOCOMOTIVE OR ROCKER TYPE.



PERFORATED TYPE.



STRAIGHT-RIB TYPE.



END VIEW, GENERAL PLAN AND CROSS VIEW.

Thomas Elliptic Grate Bars can be used with any fuel and are self-cleaning. Made in different sizes. Guaranteed for 12 months.

Are made for use in saw mills, oil mills, ice plants, electric plants, fertilizer plants, mines, locomotives, steamboats, and wherever and whenever steam is needed.

Being circular have great strength. Having open spaces in the sides, keep lower part cool by a lateral draft, radiating heat from the connecting lugs and prevent crystallizing. Top surface being oval sheds ashes automatically, prevents slag clinkers, and gives clean fire always. Bottom surface being oval has great strength and holding power, and with draft spaces in sides protecting it from heat, gives it a long life.

Every power plant will be operated more economically by using them. We will gladly go into details with those interested.

Thomas Grate Bar Co.

**Birmingham, Ala.
Branch: Valdosta, Ga.**

GALENA-SIGNAL OIL CO.

FRANKLIN, PA., U. S. A.

Leading Railway Lubricating and
Illuminating Oils of America

GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S
PERFECTION VALVE and SIGNAL OILS
are standard the world over.

ELECTRIC RAILWAY LUBRICATION A SPECIALTY

Guarantee Cost

Expert Service

S. A. Megeath, President

ROBINSON :: OILS

YOU would not take other oils for a gift—
after you had used any of the ROBINSON
oils. You ought to get a sample of No. 6
Cylinder Oil—Colophine Engine Oil—one of
our greases and the Booklet "Why." We'll
meet you half way if you write today. Sup-
pose you do.

Wm. C. Robinson & Son Co.

1511-17 Thames St., Baltimore, Md.

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GULF REFINING CO.

—REFINERS OF—

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PETROLEUM

HIGH GRADE

Engine Gasoline
Kerosene
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Painters' Naphtha
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Paving and Roofing Asphalt

OUR KEROSENE AND GASOLINE

IS MANUFACTURED FROM
HIGH GRADE OKLAHOMA CRUDE OIL

LUBRICATING OILS

CYLINDER
HIGH VISCOSITY

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CORDAGE

LOW COLD TEST

We make a Specialty of Heavy Oils
of Asphaltum Base for
Oiling Roads

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NEW ORLEANS

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Three Good Reasons for Using It:

ONE: Albany Grease is the best lubricant for all mov-
ing parts of MACHINERY.

TWO: Albany Grease does not drip—no
drippings, saves on your IN-
SURANCE; Albany Grease
is wasteless, lasts longest and
is CHEAPEST in the end.

THREE: Albany Grease
never gums and ab-
solutely REDUCES fric-
tion.

A liberal
sample of Albany
Grease, an Albany
Grease Cup and a book on
"Death to Friction" will
be sent free of charge, to MAKE
GOOD our claim, on receipt of
your name and address.

Albany Lubricating Co.

Adam Cook's Sons, Proprietors
708-710 Washington St.,

New York

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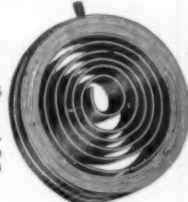
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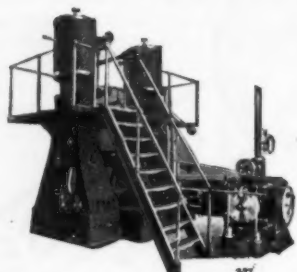
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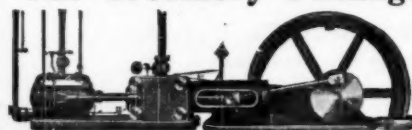
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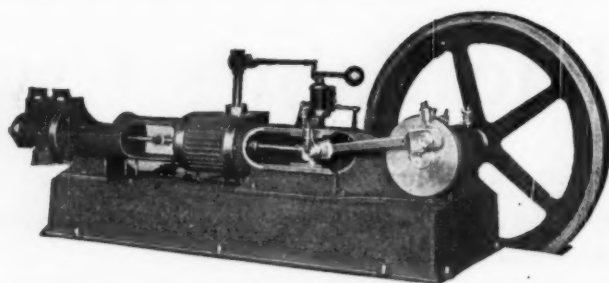
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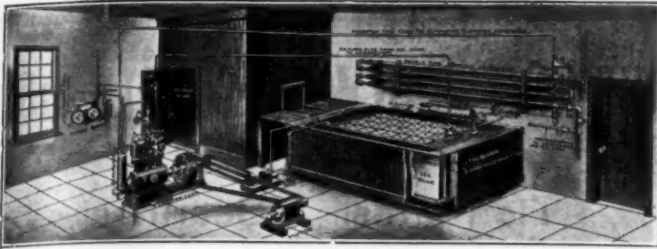
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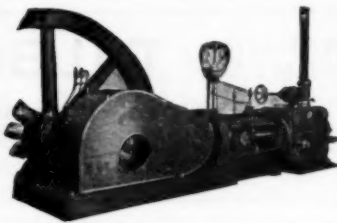
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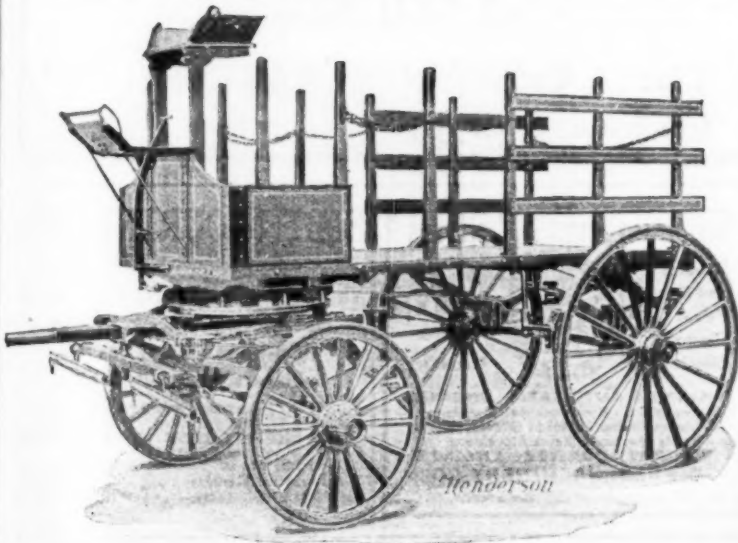
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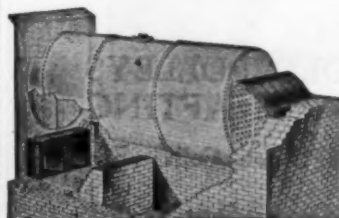
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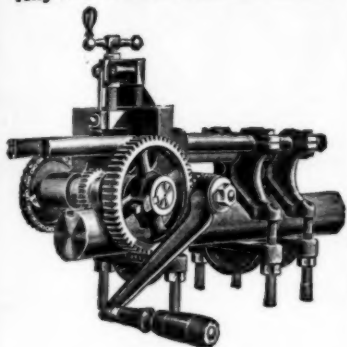
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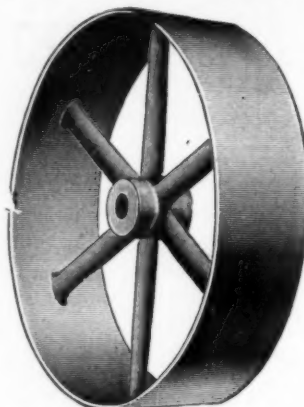


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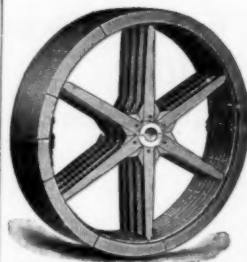


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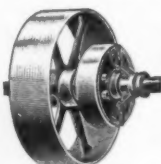
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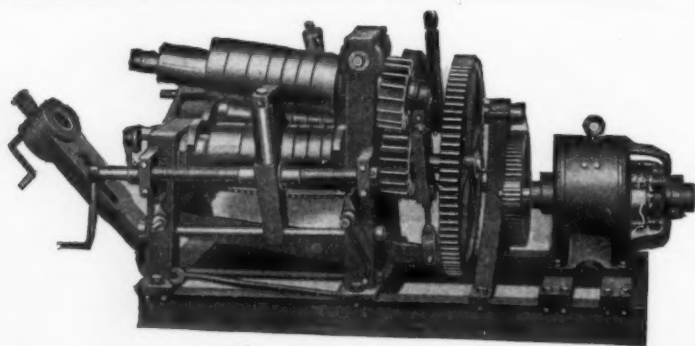
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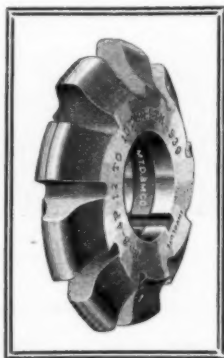
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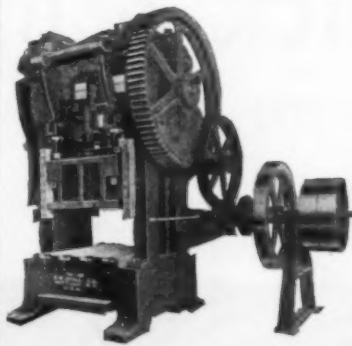
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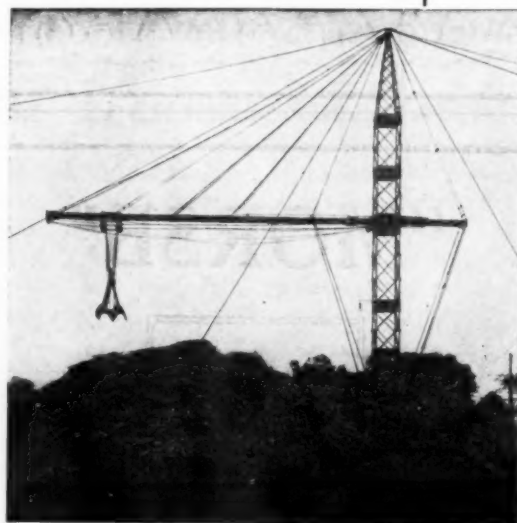
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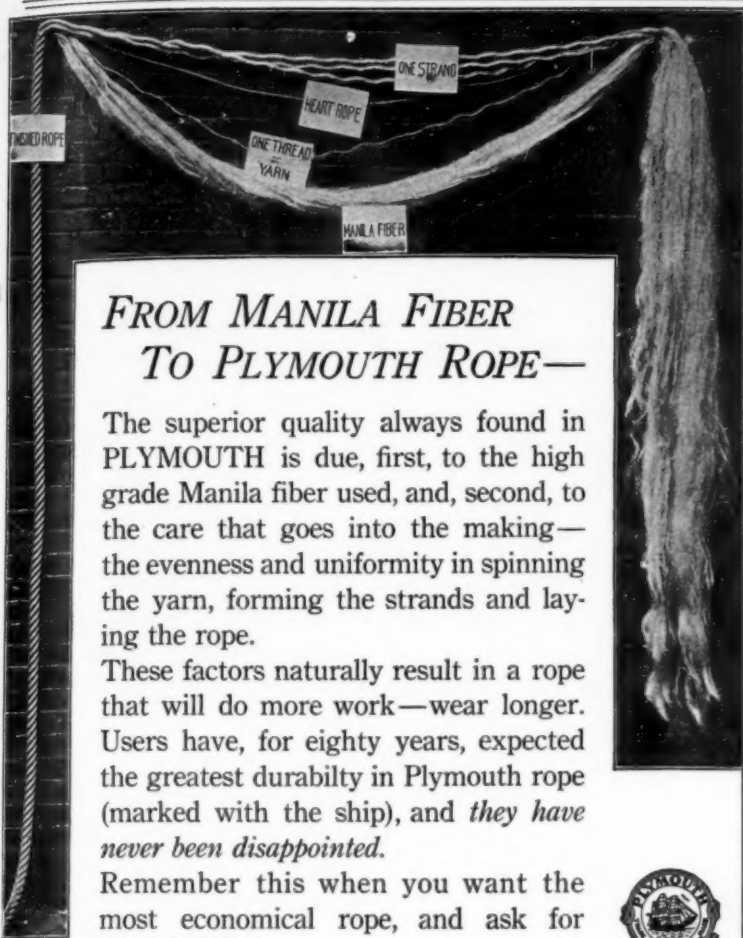
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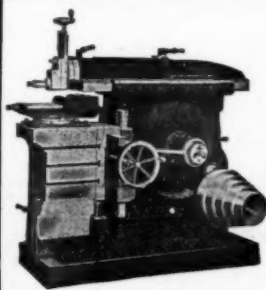
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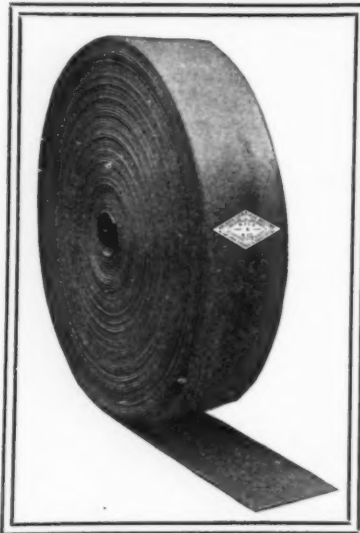


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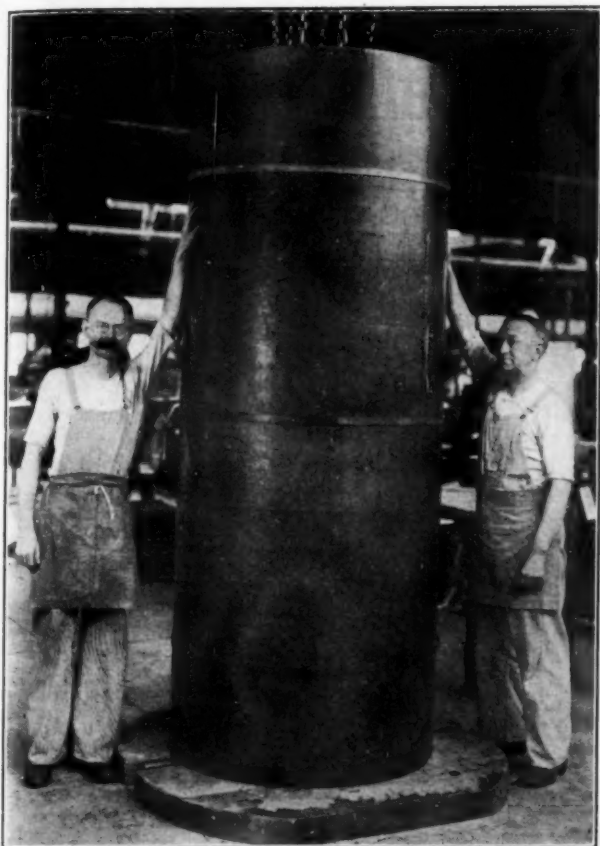
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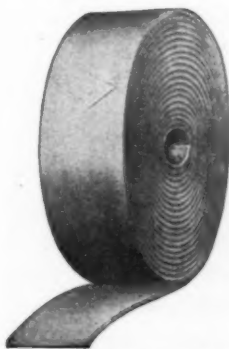
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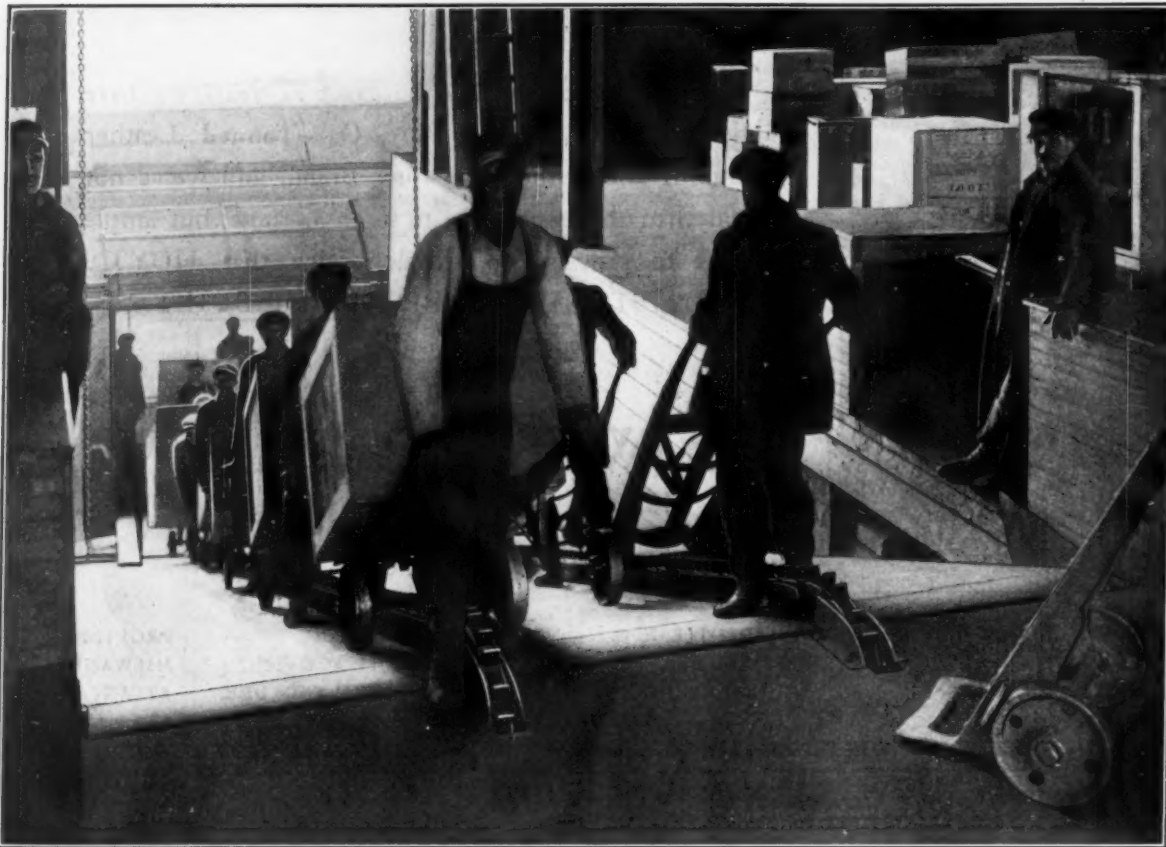
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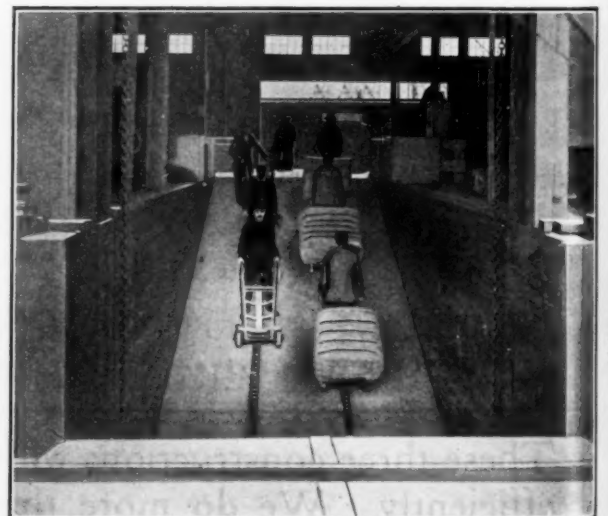
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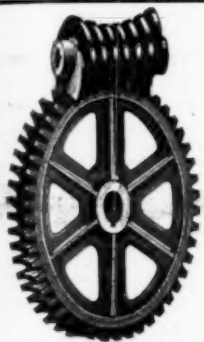
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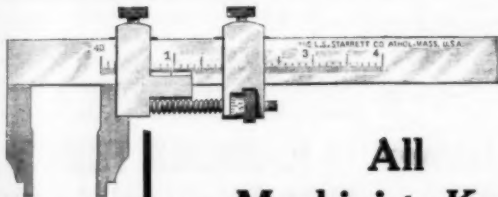
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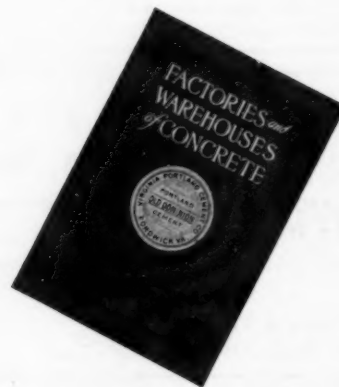
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It is of absolute uniformity of composition and pulverization. It is moderately slow-setting, thus insuring increased strength at long periods. It is guaranteed to meet standard specifications.

Prompt service is assured by our 2000-bbl. daily capacity and splendid shipping facilities on four railroads.

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A quick-hardening, highly plastic, non-staining combination of Calcium Aluminate and Hydrated Lime, suitable for all-around use in mortars, plasters and stuccos. Economical and satisfactory. Prepared with or without hair.



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HOLLOW CORE WALL FOR HYDRAULIC FILL DAMS

In a Hydraulic Fill dam the problem of the drainage of the sluicing water is of controlling importance. The sluiced material should be such that it will not retain the sluicing water for an undue time. If the material is such that it will not deliver the water with reasonable rapidity, a decided settlement, with consequent cracks, is bound to ensue when the fill ultimately dries out.

The sluicing water on the fill is maintained in a summit pool by hand-made levees. It is found that in depths downward to five feet the material in suspension becomes comparatively solidified, and it will then hold its shape and consistency. The sluicing water, however, must necessarily be under constant drainage if rapid construction and solid banks are expected.

A Hydraulic Fill dam during construction generally has water in the impounding reservoir above it which rises at substantially the same rate as the increasing height of the dam, but a little below its level, thereby reducing the drainage head in that direction. Assuming that there is no core wall, the sluicing water is forced to pass largely through the down stream fill unless drainage tubes in some form are provided. The passage of the drainage water through such a mass of material is slow, and hence full advantage cannot be taken of the otherwise rapid method of hydraulic construction.

Again, the material of the fill will not take its final set until the fill is complete. The fill is therefore saturated during construction, and saturated material is always of greater bulk than dry material. This fact accounts in a measure for the excessive settlement in hydraulic fills.

All this is controlled by building a Hollow Core Wall through the center of the embankment and providing it with numerous drainage gates of simple construction. A facing of broken stone or gravel should be placed next to the upstream face of the core wall.

It is evident at a glance that with this construction we have accomplished two things.

First, we have provided an effectual water barrier whereby,

when the lower prism of the dam is once drained, it is forever protected against re-saturation.

Second, the problem of drainage is entirely under control, and can be hastened or retarded at will. Drainage head is secured in two directions, namely, towards the core and towards the toe. The material more quickly receives its final set, and unexpected settlement is thereby avoided. The time of construction is greatly hastened.

Moreover, in the usual form of construction the levees on the outside edge of the pond frequently give way and permit a localized washout on the slope of the fill. The central drainage into the Hollow Core Wall permits of instant relief of excessive water and makes a washout impossible.

Again, if the sluicing material is such that it settles rapidly, the surface water can be quickly drawn off into the Core Wall.

Once the fill is completed the drainage gates into the Core Wall from the lower prism are permanently opened. This insures an

absolutely dry prism—a result never before reached.

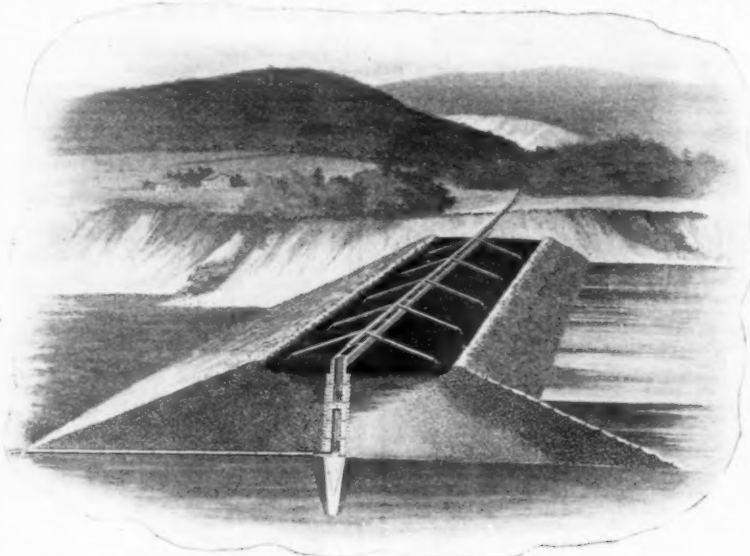
The above is a mere outline of the functions of the Hollow Core Wall in relation particularly to the Hydraulic Fill during construction. The advantages named in a previous advertisement in connection with an ordinary rolled earth dam apply in full to the Hydraulic Fill when the same is completed and in permanent service.

The above notes are fairly illustrated by the sectional drawing herewith presented, which roughly represents a Hydraulic Fill dam in process of construction. The Hollow Core Wall is carried up to and a little above the ultimate embankment, and provides interior inspection through the heart of the fill.

This topic is more fully treated in our circular on EARTH DAMS. (This circular is now in preparation and will be issued during the month of May.) The introduction of the Hollow Core Wall entirely

changes the basic problems of an earth dam, whether of rolled earth or hydraulicked into place. These points will not admit of discussion in an advertisement.

Respectfully submitted.



HYDRAULIC FILL DAM WITH HOLLOW CORE WALL IN PROCESS OF CONSTRUCTION.

NOTICE OF SUIT IN INFRINGEMENT

Notice is hereby given that on April 9, 1912, we brought suit in the United States District Court for the Southern District of New York against the Hydraulic Properties Company of New York to restrain the infringement of our Re-issued Letters Patent, 12,246, which cover broadly the type of dam now known as the "Ambursen Reinforced-Concrete Dam," or otherwise as the "Hollow Dam."

For the past seven years our patent rights have been very generally respected, and licenses have been granted by us whenever conditions made it impossible for us to execute the work with our own force. The aggregate of royalties received by us during this period, and particularly within the last two years, has amounted to a very large sum of money—much of this by prearrangement, but a considerable portion after the fact of infringement and under more or less pressure. We wish it clearly understood when we execute the work ourselves no royalty, concealed or otherwise, is introduced into our charges.

Owing to the marked success which has attended the construction of the Reinforced-Concrete Dam by this Company, and stimulated apparently by the belief that we were indifferent to our patent rights, infringements in various parts of the country are apparently multiplying. We therefore give public notice that from this date we shall vigorously defend our rights and prosecute all infringements.

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No. 88 Pearl St., Boston, Mass.

Ambursen Hydraulic Construction Company

Engineer--Constructors

88 Pearl Street, - - - BOSTON, MASS.

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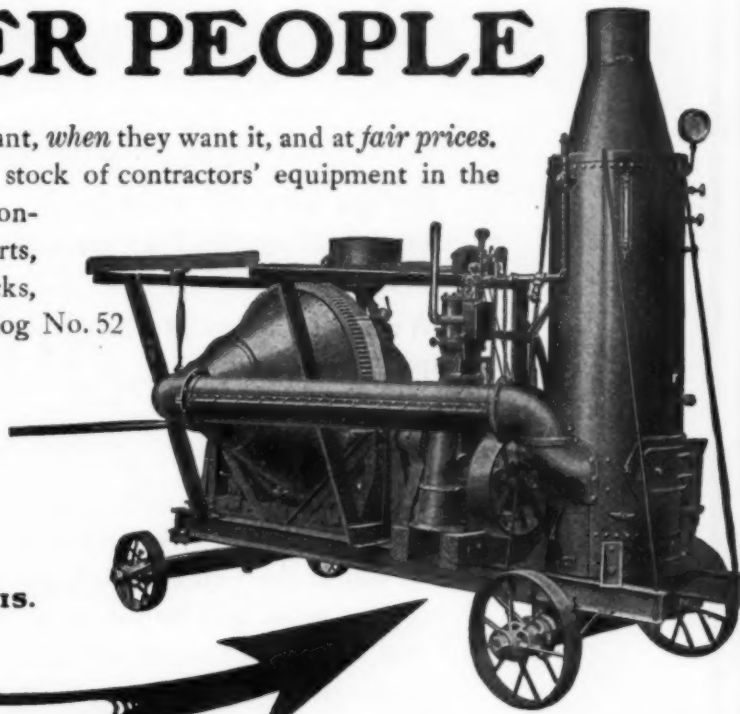
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will gladly demonstrate its advantages. Ask for Catalogue K.

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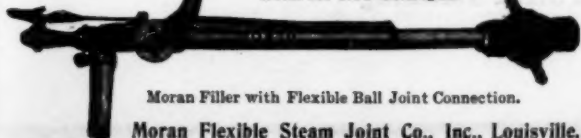
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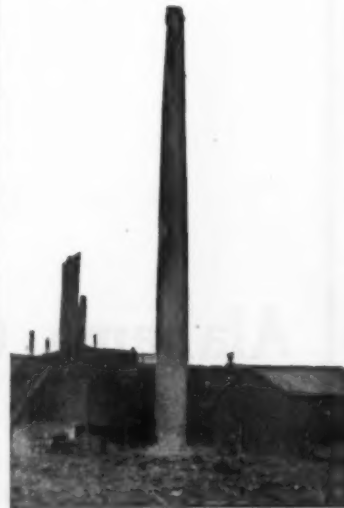
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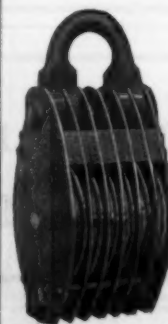
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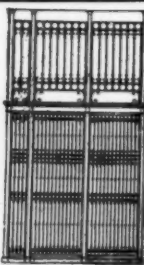
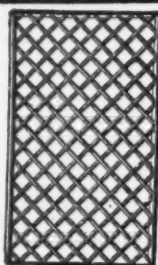
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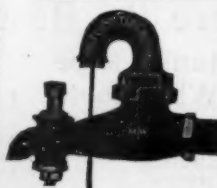
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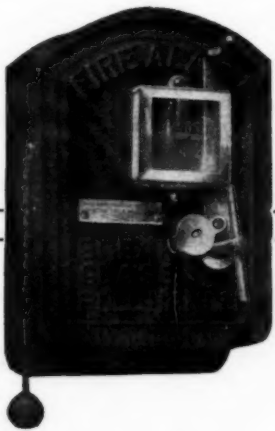
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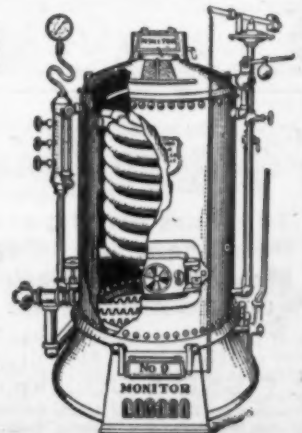
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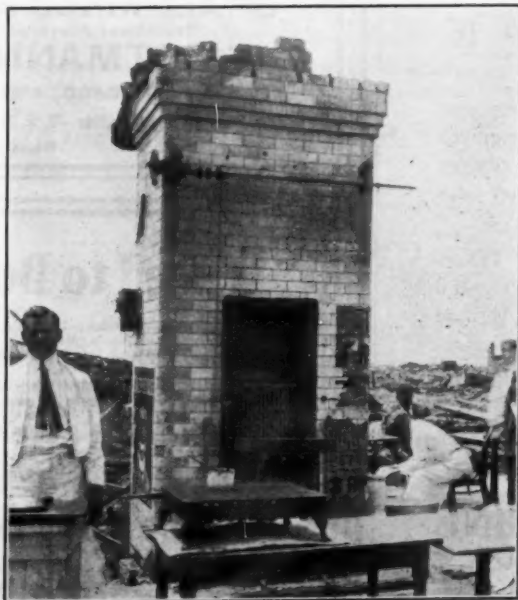
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Ceresit is the name of a dependable waterproofing.

Ceresit is a cream white paste which is added to, and is readily dissolved
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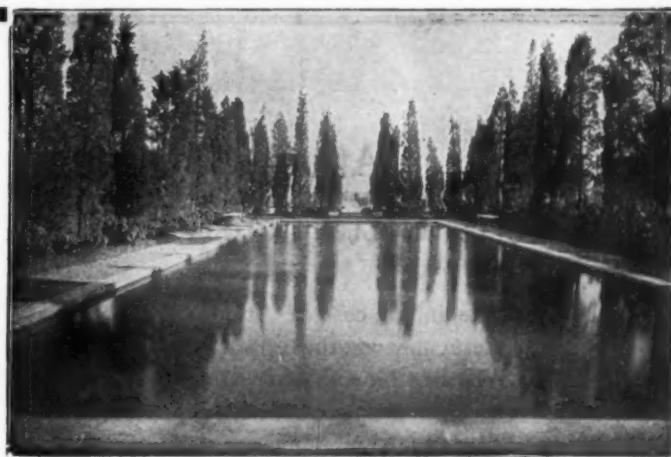
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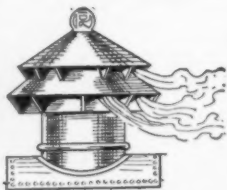
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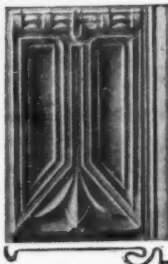
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That's Why We Use
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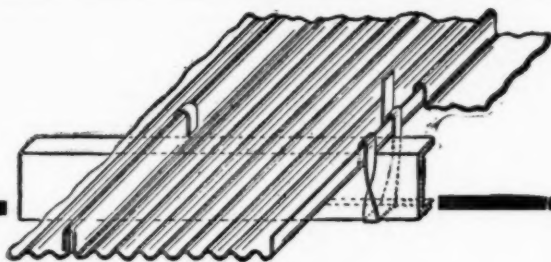
To be fair, we have based this comparison on the very words of the various roofing manufacturers.

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It puts you in position to use your own common sense in reaching a verdict.

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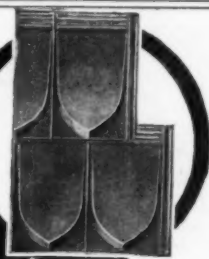
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Barrett Specification Roofs

A CONCRETE CITY

Covered with Barrett Specification Roofs

IN the illustration below the Turner Construction Company of New York has brought together in a scale drawing an accurate representation of most of the important modern concrete buildings which they have erected during the past nine years at an approximate cost of \$12,000,000.

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In the use of concrete the designers of these buildings planned for economy—the real economy that results from adequate strength and no repairs.

Barrett Specification Roofs are a *real economy*, and it is significant that 95 per cent. of the entire roof area is covered with this type of roofing. The figures are as follows:

Barrett Specification type of Roofs.....	1,490,523 sq. feet
Plastic Roofings.....	14,714 sq. feet
Slate Roofings.....	21,640 sq. feet
Tile Roofings.....	5,619 sq. feet
Ready Roofings.....	38,381 sq. feet
Copper Roofings.....	6,355 sq. feet
All other kinds.....	7,448 sq. feet

It is important to remember that while all these buildings were constructed by the Turner Construction Company, the

specifications were drawn by a large number of architects and engineers. That the great majority of these specified a Barrett Specification type of roof emphasizes the fact that whenever this roof is practical the best modern engineering practice will have no other kind.

These roofs were selected for one reason only, namely, that they would give *better service at lower cost* than any other roof covering.

Barrett Specification Roofs require no painting or similar attention—in other words, there are no maintenance costs. They will last upwards of 20 years without any care.

That the above statement is conservative may be realized from the fact that roofs of this type have lasted, without attention, for thirty-five years and are still in serviceable condition.

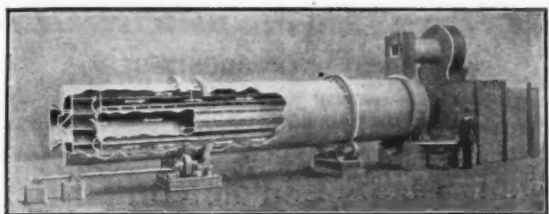
The superior economy of Barrett Specification Roofs justifies their adoption not only on big first-class concrete buildings, but on every flat-roofed building from a tenement to a skyscraper—from a small mill to a modern manufacturing plant costing millions—but be sure it's a real Barrett Specification Roof—and the only way to be sure is to incorporate The Barrett Specification in full in your plans.

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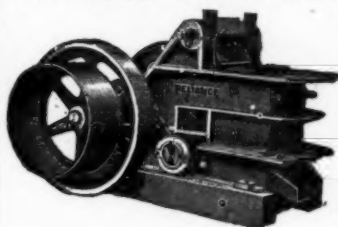
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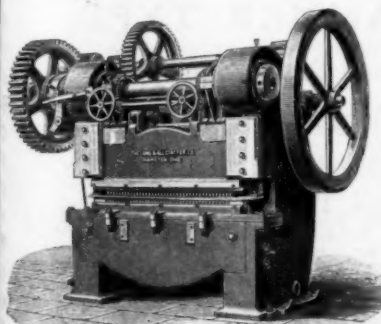
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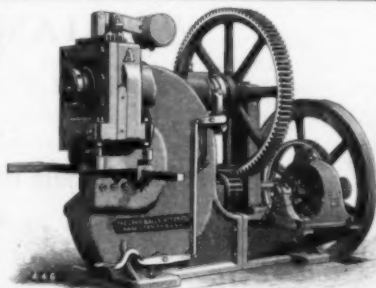
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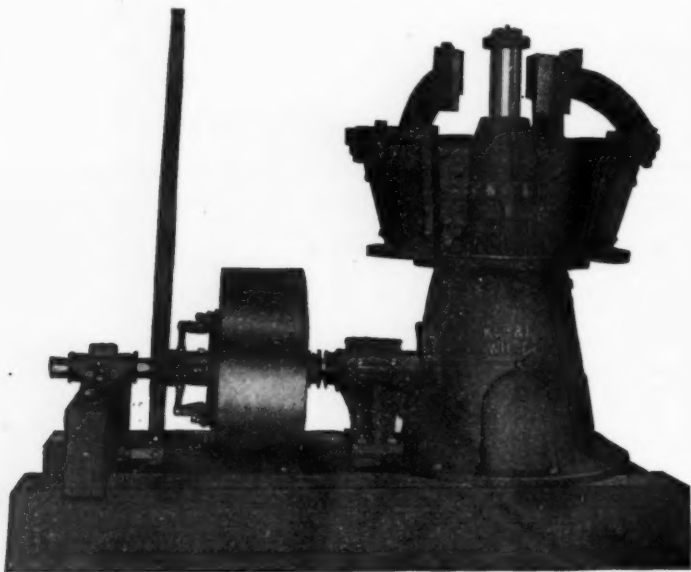


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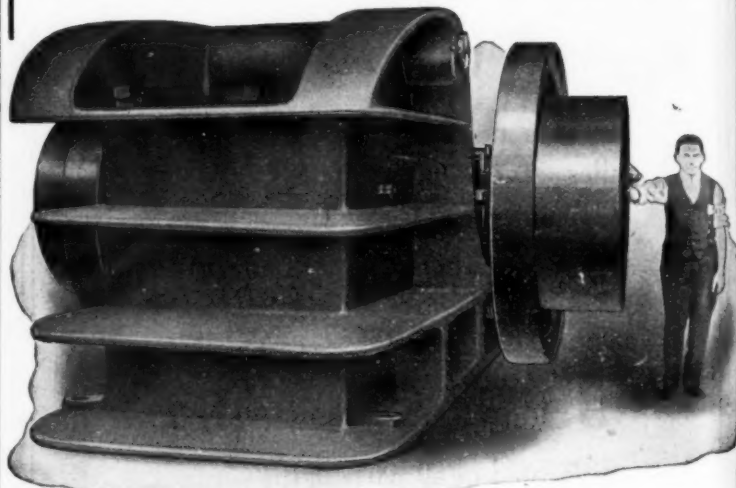


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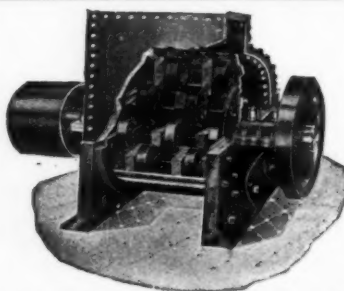
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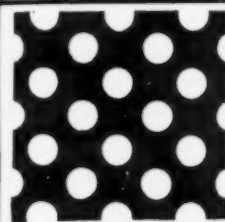


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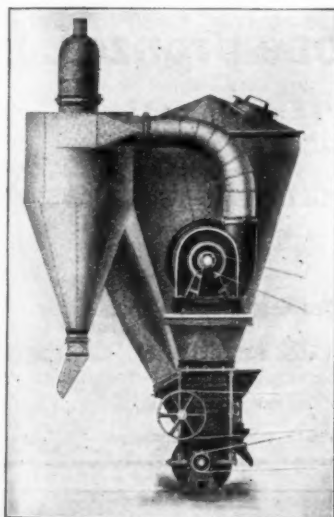
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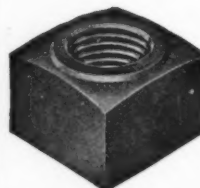
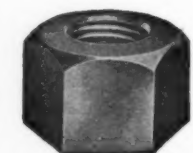
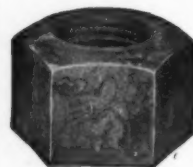
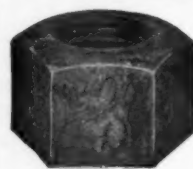
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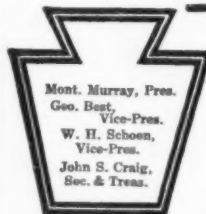
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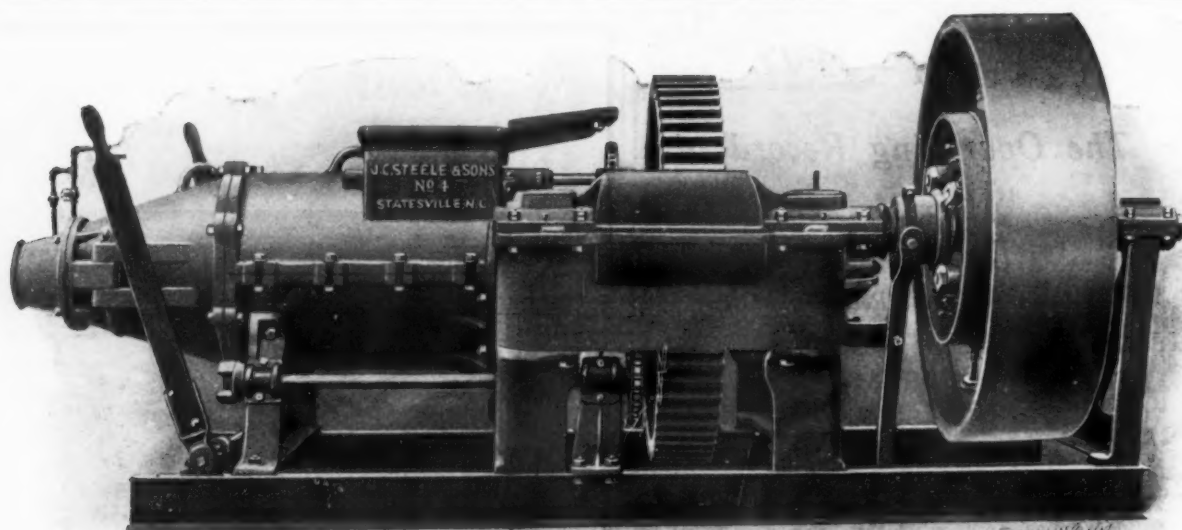
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No. 4 Brick Machine. Capacity 3000 to 5000 bricks per hour.
Metal Shield over gears.

Up-to-Date Brick Makers Machine

This machine embodies the latest principles in brick making. The simplest and strongest of its capacity on the market. The master gear is 49" diameter and driving pulley 52", and you get the machine geared to the same thing as a double-gear machine without the loss of power and other disadvantages of the extra gearing.

REPLACED MACHINE OF ANOTHER MAKE

Milford Brick Co., Milford, Del., Nov. 7, 1910: "Regarding the Brick Machine bought of you, will say we are very much pleased with it, in fact, we had one other machine that would not work the clay, but now we are making the best brick that we ever made."

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STATESVILLE, N. C.
20 YEARS EXPERIENCE IN WORKING SOUTHERN CLAYS

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GOOD 47 Years Ago

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And in every city, town, village
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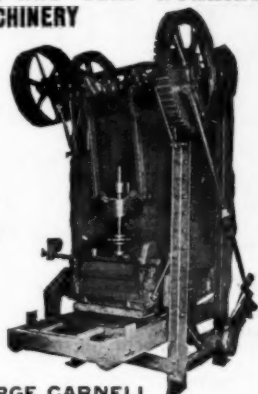
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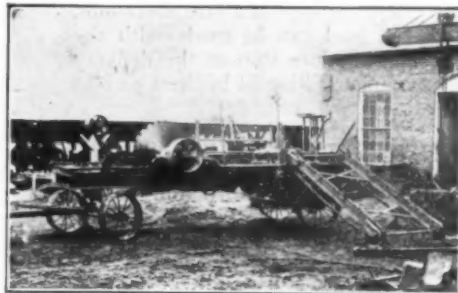
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A NEW AND MODERN PLANT CREOSOTED WOOD PAVING BLOCKS

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The Standard Cross Tie Machine Co. New Orleans, La.

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Annual Capacity, 200 Million Feet

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Railroad and Mining Timbers a Specialty

General Offices—ELIZABETH, CALCASIEU PARISH LOUISIANA

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Manufactured according to S. L. M. A. specifications.



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Investigate Hunt Motor Cars

Hunt Motor Cars, either as tractors or independent carrying units, afford splendid and economical handling facilities for such bulk material as sand, clay, phosphate rock, crushed stone, cement clinker, coal, ashes, etc.

Travel to a fixed point, dumping of load and return to the charging point can be entirely automatic, or manual operation may be employed where the travel and movement of the load is variable.

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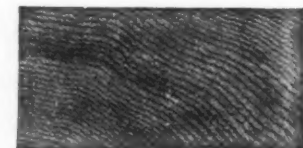
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THE CAPACITY OF YOUR
DRY KILN
GRAND RAPIDS VENEER WORKS

**WELL
DRIED
LUMBER**



Does your kiln dry
enough lumber?
Is it all *perfect*?

We can increase your capacity
and quality.

We are DRY KILN
ENGINEERS and
JOBBERs

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Mixes 8 Cubic
Yards of Perfect
Concrete
per man per day.

Supplied ready to run. Fully
equipped, including 4 H. P.
gasoline engine of well-known
make.

MODERATE PRICE IMMEDIATE DELIVERY

Agents Wanted for Unoccupied Territory.

JOHN G. CLOUGH, 1798 Broadway, QUINCY, ILL.



You Would Never Try To Drive Your Auto This Way

You couldn't see! If the headlights were reversed, the glare would dazzle and blind you. The first thing you knew, you'd climb a tree.

It's exactly that way in a factory. When your men work with a bare lamp shining in their eyes, the glare and dazzle has the very same effect as the reversed headlight. They don't run off a precipice, they don't climb a tree, but they DO waste money—YOUR MONEY—in spoilage, in "seconds" and in slow speed.

What you want is light on the object, and not in the eye, and HOLOPHANE STEEL REFLECTORS will give it to you. They are scientifically designed to protect the eyes from glare and deliver the maximum illumination, right where you want it, with the minimum cost for current.

HOLOPHANE STEEL REFLECTORS prevent waste of light, because all the light is concentrated where it is needed. In most mills and factories HOLOPHANE STEEL REFLECTORS make it possible to reduce the lighting expense. In every case output and profits are increased, because there are fewer accidents to work and workers, less spoilage, less waste time and better work.

Will you consider the proof of experience in other mills? We want to show what HOLOPHANE STEEL REFLECTORS will do for you. Stop riding with the headlights reversed.

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Ref. Co.

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Rome Scale & Manufacturing Co.

ROME, GA.

MANUFACTURERS OF
SCALES AND TRUCKS
OF ALL KINDS.



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WE MAKE A SPECIALTY
OF SCALES FOR
RAILROADS
OIL MILLS
AND FERTILIZER WORKS

Our scales contain every improvement known to modern science in the manufacture of heavy weighing machines.

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The Remedy

For that hot and stifling room is a

Sturtevant Electric Propeller Fan Also Made for Pulley Drive



They increase output, reduce sick leave, and raise efficiency of workers by keeping the air fresh and cool.

Easily and cheaply installed, the first cost is small.

The scientific construction and design of the fan blades makes possible the moving of immense volumes of air at small expenditure of power.

These fans are invaluable for use in work rooms, offices, kitchens, billiard halls, and in all places where heat, smoke or fumes are to be removed.

Our engineering staff are always ready to make suggestions if you will inform us of the conditions to be met, the size of the room, etc.

Bulletins 146 N and 149 N describe these fans.

B. F. Sturtevant Co.
Hyde Park, Mass.

Offices within calling distance from all large centers.

No. 359

"Buffalo" Jet Condensers

are widely used to serve engines, pumps, turbines, vacuum pans, etc.

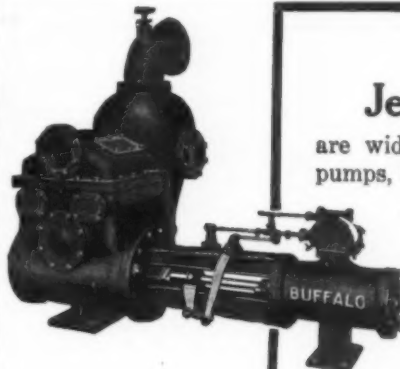
Action is simple and positive under all conditions. Does not stick or short-stroke.

Maintains a high vacuum with a minimum of injection water and steam consumption.

Write to Dept. Q for sizes, capacities and prices.

BUFFALO STEAM PUMP CO.
BUFFALO, N. Y.

New York Philadelphia Chicago
Charlotte St. Louis Birmingham



"THE STANDARD" SCALES

Almost all of the material used in the manufacturing world is bought or sold by weight. Consequently it is up to every manufacturer to have scales that can be depended on to weigh right all the time.

It isn't enough to know that your scales will weigh right when they are first set up. You want to know that they are going to stay right.

'The Standard' Scales are made right, will weigh right today, tomorrow and next year.

And besides this, they are sold at a price that is right, and the price is not controlled by any "Trust." Tell us what kind of a scale you want, and we will tell you more about them, and how you can save money, and gain in quality by buying "The Standard" Scales.

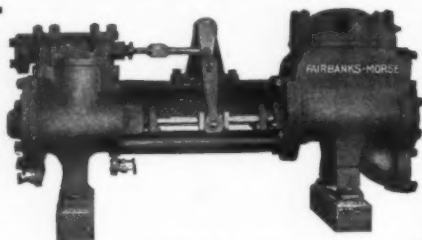
The Standard Scale & Supply Co., 243-245 Water St., Pittsburgh, Pa.

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Fairbanks-Morse Steam Pumps

Built in styles and sizes
to meet any requirement

FULLY GUARANTEED



Boiler Feed Pump
Duplex Piston Pattern

Fairbanks-Morse Quality throughout, which means simple design, very best materials and highest grade workmanship.

Write for Catalog No. 938SP

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is When It Starts.



have put out 10,000 fires before they had a chance to gather headway, and kept 5000 others from spreading.

GENERAL FIRE EXTINGUISHER CO.

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ROLLING Steel and Wood DOORS
PERMANENT SKYLIGHTS
THE KINNEAR MANFG. CO. COLUMBUS, O.

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"Ladies Friend" Water Power Washer

A Positive Reliable Machine—The Most Simple one Made.
Has No Gears—No Complicated Parts—Has but One Valve—
Requires No Oiling—A Signed Guarantee with each Machine.

Write for Particulars—A Good Proposition for the Dealer or Jobber.

The D. L. Bates & Bro. Co.

Dayton, Ohio

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TIME, LABOR AND
EXPENSE

NICHOLSON
U.S.A.

NICHOLSON FILE CO., PROVIDENCE, R. I.

YELLOW STRAND WIRE ROPE

See advertisement on page 22

YELLOW STRAND never betrayed a confidence

BRODERICK & BASCOM ROPE CO., 809 N. Main St., ST. LOUIS, MO.

WORKS { St. Louis, Mo.
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BRANCHES { 76 Warren St., New York
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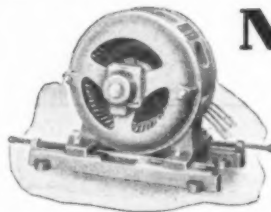
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Electrical Instruments, etc.**

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Low Prices for High Quality Goods Where
Wanted in Large Quantities

DRAPER COMPANY, HOPEDALE, MASS.



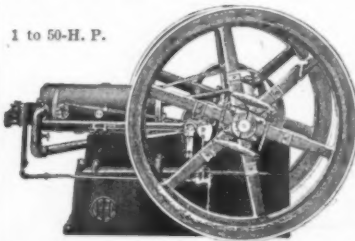
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End caps on Allis-Chalmers Motors prevent dust and dirt getting into the bearings and damaging them. This is a great advantage in mills in which there is considerable dust or lint.

Allis-Chalmers Company
Milwaukee, Wis.

IHC Gasoline Engines and Tractors

1 to 50-H. P.



High-grade four-cycle engines, made in every style, horizontal and vertical, air and water cooled; stationary, portable and mounted on skids. Operate on gas, gasoline, kerosene, naphtha, distillate, or alcohol. Kerosene-gasoline tractors, 12, 15, 20, 25 and 45-H. P.

I H C engines are general purpose machines for use on farm, in mill, factory or railroad equipment. I H C tractors are used for plowing, hauling, road grading—for every form of drawbar and belt work. Catalogues and full information on request.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)
700 Harvester Bldg. CHICAGO U S A

ROEBLING

WIRE ROPE

Made from Roebling Wire drawn from carefully selected and tested metals and stranded into rope in accordance with designs shown by long experience to be best adapted for satisfactory service.

JOHN A. ROEBLING'S SONS CO.

SO. OFFICE, Empire Bldg., ATLANTA
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A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

Vol. LXL No. 17.
WEEKLY.

BALTIMORE, MAY 2, 1912.

\$4.00 A YEAR.
{ SINGLE COPIES, 15 CENTS.

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(payable in advance) to United States,
Mexico, Cuba, Porto Rico, Hawaii and
the Philippines.

To Foreign Countries (including Canada) in
the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as sec-
ond-class matter.]

BALTIMORE, MAY 2, 1912.

THE AMERICAN SPIRIT.

A correspondent writing from Mem-
phis, Tenn., speaking of the high water
in the Mississippi Valley, says:

In sixty days from now we will all be
smiling again, crops in, and work begun to
increase the height and width of levees.
Drainage will go on, and we will look for-
ward, not backward.

That is the spirit which makes a
country — the all-conquering spirit
which enables the South to meet every
difficulty and surmount it.

WEST VIRGINIA TO CELEBRATE.

West Virginia is preparing to celebrate
in June, 1913, its fifty years of State-
hood. Those fifty years have made his-
tory in material progress. In the past
thirty of them the population of the
State has more than doubled, the capital
in its manufacturing industries has
increased twelve times, the value of its
farm properties has more than doubled,
the value of its mineral products has in-
creased fifty times and its wealth has
more than trebled. In 1880 West Vir-
ginia made 62,802 tons of pig-iron and
138,755 tons of coke, cut 180,112,000
feet of lumber, mined 1,829,844 tons of
coal and 62,802 tons of iron ore and
produced 179,000 barrels of petroleum.
In that year the total resources of its
National banks were \$5,939,454, and
individual deposits in all its financial
institutions aggregated only \$6,074,869.
There were but 691 miles of railroad
in the State. In 1911 the production of
pig-iron rose to 291,472 tons; of coke,
to 3,800,000 tons; of lumber, to 1,376-
737,000 feet; of coal, to 61,000,000 tons,
and of petroleum, to 11,000,000 barrels,
while the National bank resources had
become \$75,680,642, and the individual
deposits in banks and trust companies
\$107,366,607, and the railroad mileage
was 3754.

West Virginia's area of 24,170 square
miles embraces something more than
one-third of the area of the original
State of Virginia, and the progress that
the younger State has made is strik-
ingly illustrated by comparison of its
position in 1911 with that of the Old
Dominion fifty years ago. In 1860 Vir-
ginia had a population of 1,596,318, or
about 340,000 more than West Virginia
has today. The mineral development in
the United States had hardly begun
fifty years ago. Petroleum was dis-
covered in Pennsylvania only a few
months before 1860, and in that year
the output was but 500,000 barrels. In
the same year only 14,610,042 tons of
coal were mined in the country, and
of that total Virginia, where bituminous
coal was first mined in America, pro-
duced only 473,300 tons. West Vir-
ginia's production in 1911 was 150 times
that amount. The value of products in
manufacturing industries in the United
States in 1860 was something more than
\$1,900,000,000, and of that amount Vir-
ginia's share was over \$51,300,000. In
1909 West Virginia factories produced
to the value of \$161,960,000. The wealth
of Virginia in 1860 was estimated at
\$793,249,681. That of West Virginia to-
day is close upon \$1,200,000,000.

Great as has been the advance of the
State, placing it second among the
States of the Union in annual coal pro-
duction and fourth in petroleum output,
West Virginia has still within itself the
elements for much greater progress. Of
its estimated original supply of 150-
000,000,000 tons of coal, more than 149-
000,000,000 are still to be mined. Of
14,610,000 acres of woodland, 9,100,000
acres remain. The total area of the
State is 15,374,080 acres, of which
9,661,000 acres are in farms, but of the
farm land only 5,482,000 acres are im-
proved. Much of the acreage of the
State will never come under the plow,
and it should not be cultivated, but
should remain forever a part of the
great Appalachian Forest Reserve,
guarding the headsprings of mighty
rivers of the Continent. But the agri-
cultural future of West Virginia, the
future that will be when every acre of
tillable land is handled as it should be,
is indicated in the fact that between
1899 and 1910 the value of nine leading
crops produced in West Virginia in-
creased from \$18,450,000 to \$43,046,000,
or at the rate of 113 per cent. In the
first ten years of the century the popu-
lation of the State increased 27.4 per
cent., to 1,221,119. But that population
averages only about fifty to the square
mile, whereas in neighboring Maryland
the average is 133, and in Pennsylvania
171.

These few random facts, suggested
by the approaching semi-centennial of
the State, are likely to be expanded as
plans for the celebration develop and to
be effective in giving publicity to the
opportunities for homeseekers and in-
vestors in a region brimful of mineral,
timber and agricultural resources con-
venient to the great markets for manu-
factured products.

INCREASING INDUSTRIAL POWER IN THE SOUTH.

Within the past six months plans have been announced for hydro-electric un-
dertakings looking to the development of 1,500,000 horse-power in the South.
Those plans, carried out, would add to the present primary horse-power of the
South by about one-third. But meanwhile, there would be other additions in the
way of steam, gas, etc., which in ten years, if the rate of increase of the past
ten years in this respect should be maintained, would give the South an equip-
ment of at least 10,000,000 primary horse-power. It is believed that 1920 will
find the South with even a greater equipment, and that an equally notable
exhibit will be made as to the increase in industrial power represented by capital
invested and by the number of workers.

Comparison in the accompanying tables of the figures of the capital invested
in factories, of the number of salaried officials and clerks and of the number of
wage-earners in factories and of the amount of primary horse-power of all kinds
in 1899 and 1900 offers the basis for a study of the advance made by the South
in the first ten years of this century.

In each of these lines the rate of advance in the South has been greater than
the rate in the rest of the country.

In capital invested in factories the increase in the South was from \$1,196-
302,000 to \$2,883,929,000, or by \$1,687,627,000, equal to 141 per cent., while the

Capital Power, 1899-1909.
(Investment in Factories.)

States.	1899.	1900.	Increase.	Increase, Per Cent.
Alabama	\$60,166,000	\$173,180,000	\$113,014,000	187.8
Arkansas	25,385,000	70,174,000	44,789,000	176.5
District of Columbia..	17,960,000	30,553,000	12,593,000	70.1
Florida	25,682,000	65,291,000	39,609,000	150.3
Georgia	79,303,000	202,778,000	123,475,000	155.7
Kentucky	87,996,000	172,779,000	84,783,000	96.2
Louisiana	100,875,000	221,816,000	120,941,000	119.8
Maryland	149,155,000	251,227,000	102,072,000	68.4
Mississippi	22,712,000	72,393,000	49,681,000	218.7
Missouri	223,781,000	442,343,000	218,562,000	98.1
North Carolina.....	68,283,000	217,186,000	148,903,000	218.
Oklahoma	4,054,000	38,873,000	34,819,000	859.
South Carolina.....	62,750,000	173,221,000	110,471,000	176.
Tennessee	63,141,000	167,924,000	104,783,000	165.9
Texas	63,656,000	216,876,000	153,220,000	240.7
Virginia	92,300,000	216,392,000	124,092,000	134.4
West Virginia.....	49,103,000	150,923,000	101,820,000	207.3
Total	\$1,196,302,000	\$2,883,929,000	\$1,687,627,000	141.
United States.....	\$8,975,256,000	\$18,428,270,000	\$9,453,014,000	105.3

increase in the rest of the country was at the rate of 99.8 per cent., from \$7,778-
954,000 to \$15,544,341,000, or by \$7,765,387,000. Kentucky, Louisiana, Maryland,
Missouri and Virginia were the only five States of the South whose rates of in-
crease were less than the average for the whole South, but the aggregate increase
of factory capital in these five States was nearly 39 per cent. of the total increase
in the South. Missouri had the largest actual increase, \$218,562,000, Texas being
second, with \$153,220,000; North Carolina third, with \$148,903,000; Virginia
fourth, with \$124,092,000, and Georgia fifth, with \$123,475,000. Oklahoma's
factory capital increased at the rate of 859 per cent., typical of progress in all
lines in the new States, but next to that Texas led, with a rate of 240.7 per cent.

Oklahoma and Texas had the same relative positions as to the rate of increase
in the number of salaried persons in factories, and only Arkansas, Georgia, Ken-

Salaried Power, 1899-1909.
(Number of Salaried Men.)

States.	1899.	1909.	Increase.	Increase, Per Cent.
Alabama	2,259	6,055	3,796	168.
Arkansas	1,549	3,293	1,744	112.6
District of Columbia.....	957	1,576	619	64.6
Florida	1,781	4,625	2,844	159.7
Georgia	3,815	8,307	4,492	117.7
Kentucky	4,356	8,610	4,254	97.6
Louisiana	3,576	8,103	4,527	126.6
Maryland	6,741	12,192	5,451	80.8
Mississippi	1,200	3,403	2,143	179.
Missouri	12,474	24,486	12,012	96.3
North Carolina.....	2,894	6,529	3,635	125.8
Oklahoma	269	2,193	1,924	715.2
South Carolina.....	1,419	3,257	1,838	129.5
Tennessee	3,329	8,417	5,088	152.8
Texas	2,861	9,849	6,988	244.2
Virginia	3,828	8,551	4,723	123.3
West Virginia.....	1,744	4,971	3,227	185.
Total	55,112	124,417	69,305	125.7
United States.....	364,120	790,267	426,147	117.

tucky, Maryland, Missouri and Virginia had rates of increase less than the
average rate for the South, which was 125.7 per cent., representing an increase
from 55,112 to 124,417, or 69,305. The increase in the rest of the country was
from 309,008 to 665,850, or by 356,842, equal to 115.5 per cent.

The rate of increase in the number of salaried persons was two and a half

times as great as the rate of increase in the number of wage-earners in Southern factories, although the actual increase in the number of wage-earners was five times that in the number of salaried persons, and the number of wage-earners in 1909 was more than ten times the number of salaried persons. In the ten

Wage-Earning Power, 1899-1909.

(Number of Wage Earners.)

States.	1899.	1909.	Increase.	Per Cent.
Alabama	52,711	72,148	19,437	36.9
Arkansas	31,525	44,982	13,457	42.7
District of Columbia	6,155	7,707	1,552	25.2
Florida	35,471	57,473	22,002	62.
Georgia	83,336	104,588	21,252	25.5
Kentucky	51,735	65,400	13,665	26.4
Louisiana	40,878	76,165	35,287	86.3
Maryland	94,170	107,921	13,751	14.6
Mississippi	26,799	50,384	23,585	88.
Missouri	107,704	152,993	45,289	42.
North Carolina	72,322	121,473	49,151	67.9
Oklahoma	2,381	13,143	10,762	451.9
South Carolina	47,025	73,046	26,021	55.3
Tennessee	45,963	73,840	27,877	60.6
Texas	38,604	70,229	31,625	81.9
Virginia	66,223	105,676	39,453	59.5
West Virginia	33,080	63,893	30,813	93.1
Total	836,082	1,261,061	424,979	50.8
United States	4,712,763	6,615,046	1,902,283	40.3

years the number of wage-earners increased from 836,082 to 1,261,061, or by 424,979, equal to 50.8 per cent., in the South, and from 3,876,681 to 5,353,985, or by 1,477,104, equal to 38.1 per cent., in the rest of the country. Among the States of the South North Carolina had the largest increase in the number of wage-earners, 49,151, and Missouri was second, with 45,289; Virginia third, with 39,453; Louisiana fourth, with 35,287, and Texas fifth, with 31,625. Ten States—Florida, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia—had a rate of increase in the number of factory wage-earners greater than the average rate of increase for the whole South.

Primary horse-power in the South more than doubled in the ten years, the increase being from 1,918,671 to 4,071,899, or by 2,153,228, equal to 112.2 per cent.,

Primary Horse-Power, 1899-1909.

States.	1899.	1909.	Increase.	Per Cent.
Alabama	173,208	357,837	184,629	106.6
Arkansas	79,560	173,088	93,528	117.1
District of Columbia	10,255	16,563	6,308	61.5
Florida	36,356	89,816	53,460	147.
Georgia	136,499	298,241	161,742	118.5
Kentucky	145,854	230,224	84,370	57.8
Louisiana	190,182	346,652	156,470	82.2
Maryland	132,652	218,244	85,592	65.2
Mississippi	65,738	206,222	140,484	213.7
Missouri	189,117	340,467	151,350	80.
North Carolina	154,467	378,556	224,089	145.
Oklahoma	11,572	71,139	59,567	515.6
South Carolina	112,697	276,378	163,681	145.1
Tennessee	130,318	242,277	111,959	85.9
Texas	116,984	319,371	202,387	173.
Virginia	141,491	283,928	142,437	100.6
West Virginia	92,321	222,896	130,575	141.4
Total	1,918,671	4,071,899	2,153,228	112.2
United States	10,097,893	18,680,776	8,582,883	84.9

while the increase in the rest of the country was at the rate of 78.6 per cent., from 8,179,222 to 14,608,877, or by 6,429,655. North Carolina, in the center of hydro-electric development, had the largest increase among the Southern States, 224,089, with Texas second, 202,387; Alabama third, 184,629; South Carolina fourth, 163,681, and Georgia fifth, 161,742.

The value of products of factories increased 101.9 per cent. in the South and 77.9 per cent. in the rest of the country. This rate of increase, both in the South

Value of Factory Products, 1899-1909.

States.	1899.	1909.	Increase.	Per Cent.
Alabama	\$72,110,000	\$145,962,000	\$73,852,000	102.4
Arkansas	39,888,000	74,916,000	35,028,000	87.8
District of Columbia	16,426,000	25,289,000	8,863,000	53.9
Florida	34,184,000	72,890,000	38,706,000	113.2
Georgia	94,532,000	202,863,000	108,331,000	114.5
Kentucky	126,509,000	223,754,000	97,245,000	76.8
Louisiana	111,398,000	223,949,000	112,551,000	101.
Maryland	211,076,000	315,669,000	104,593,000	49.5
Mississippi	33,718,000	80,555,000	46,837,000	138.8
Missouri	316,304,000	574,111,000	257,807,000	81.5
North Carolina	85,274,000	216,656,000	131,382,000	154.
Oklahoma	8,134,000	53,682,000	45,548,000	559.9
South Carolina	53,336,000	113,236,000	59,900,000	112.3
Tennessee	92,749,000	180,217,000	87,468,000	94.3
Texas	92,894,000	272,896,000	180,002,000	193.8
Virginia	108,644,000	219,794,000	111,150,000	102.3
West Virginia	67,007,000	161,960,000	94,953,000	141.7
Total	\$1,564,183,000	\$3,158,399,000	\$1,594,216,000	101.9
United States	\$11,406,927,000	\$20,672,052,000	\$9,265,125,000	81.2

and in the rest of the country, was less than the rate of increase in the amount of capital, in the number of salaried persons and in the amount of horse-power. It was greater than the rate of increase in the number of wage-earners, so that there were \$2502 worth of product in 1909 to each wage-earner, as compared with \$1869 in 1899 in the South, while in the same time the gross returns for every dollar invested had decreased from \$1.30 to \$1.09, and the gross returns for every primary horse-power had decreased from \$815 to \$775. In the rest of the country in the same period, the gross value of products per each wage-earner

increasing from \$2539 to \$3271, that value decreased from \$1.27 to \$1.13 per each dollar of capital invested, and from \$1203 to \$1198 per each primary horse-power.

The amount of industrial power represented in farm capital, including the value of lands, buildings, live-stock, implements and machinery, in the South increased at the rate of 108.2 per cent. between 1900 and 1910, from \$5,262,278,962 to \$10,961,865,176, or \$5,699,586,214, and the increase in the rest of the country was from \$15,251,723,038 to \$30,029,134,824, or by \$14,777,411,986 equal to 96.9 per cent. In that period the power represented in the number of operators of

Farm Capital Power, 1900-1910.

(Investment in Agriculture.)

States.	1900.	1910.	Increase.	Per Cent.
Alabama	\$179,399,882	\$370,138,429	\$190,738,547	106.3
Arkansas	181,416,001	400,089,303	218,673,302	120.5
District of Columbia	11,535,376	8,476,533	*3,058,843	*26.5
Florida	53,929,064	143,183,183	89,254,119	165.5
Georgia	228,374,637	580,546,381	352,171,744	154.2
Kentucky	471,045,856	773,797,880	302,752,024	64.3
Louisiana	198,536,906	301,220,988	102,684,082	51.7
Maryland	204,645,407	286,167,028	81,521,621	39.8
Mississippi	204,221,027	426,314,634	222,093,607	108.8
Missouri	1,033,121,897	2,052,917,488	1,019,795,591	98.7
North Carolina	233,834,693	537,716,210	303,881,517	130.
Oklahoma	277,525,433	918,198,882	640,673,449	230.9
South Carolina	153,591,159	392,128,314	238,537,155	155.2
Tennessee	341,202,025	612,520,836	271,318,811	79.5
Texas	962,476,273	2,218,645,164	1,256,168,891	130.5
Virginia	323,515,977	625,065,383	301,549,406	93.2
West Virginia	203,907,349	314,738,540	110,831,191	54.4
Total	\$5,262,278,962	\$10,961,865,176	\$5,699,586,214	108.3
United States	\$20,514,002,000	\$40,991,000,000	\$20,476,998,000	99.8

*Decrease.

farms, including owners, managers and tenants, increased in the South from 2,895,590 to 3,363,955, or by 468,365, equal to 16 per cent.

There is, of course, nothing finally conclusive in these comparisons of increases in the several lines of activities represented in manufacturing and agriculture.

Farm Operator Power, 1900-1910.

(Number of Persons Operating Farms.)

States.	1900.	1910.	Increase.	Per Cent.
Alabama	223,220	262,901	39,681	17.7
Arkansas	178,694	214,678	35,984	20.1
District of Columbia	269	217	*52	*19.3
Florida	40,814	50,016	9,202	22.5
Georgia	224,691	291,027	66,336	29.5
Kentucky	234,667	259,185	24,518	10.4
Louisiana	115,969	120,546	4,577	3.9
Maryland	46,012	48,923	2,911	6.3
Mississippi	220,803	274,382	53,579	24.2
Missouri	284,886	277,244	*7,642	*2.7
North Carolina	224,637	253,725	29,088	12.9
Oklahoma	108,000	190,192	82,192	76.2
South Carolina	155,355	176,434	21,079	13.5
Tennessee	224,623	246,012	21,389	9.5
Texas	352,190	417,770	65,580	18.6
Virginia	167,886	184,018	16,132	9.6
West Virginia	92,874	96,685	3,811	4.1
Total	2,895,590	3,363,955	468,365	16.

*Decrease.

For that it would be necessary to reduce money, muscle and mind to some common term such as primary horse-power, which is manifestly an impossibility, and, moreover, to have intimate knowledge of the various grades of mind and muscle represented in industrial activities. But one or two general conclusions present themselves. The greater returns in the rest of the country than in the South per each dollar of factory capital reflects the fact that the South is not yet making the most of its raw materials for manufacturing and has still a great opportunity in the field of finished products. Likewise, though the number of wage-earners in the South has increased more rapidly than in the rest of the country, there is still large room for an increase in the number of skilled workers. These two facts make more significant, however, the difference in the rates of increase in the value of products in the South and in the rest of the country, a difference in favor of the South of 24 per cent., suggestive of the industrial progress now underway in that section.

AN OKLAHOMA EXHIBIT.

In 1889 the Territory of Oklahoma was created from a part of the Indian Territory. Five years later, in April, the *Daily Oklahoman* began publication. In celebration of the eighteenth anniversary of its own birth and the twenty-third anniversary of the beginning of Oklahoma, now a State four years old, the newspaper issued on April 22 an edition requiring more than 25 tons of paper, and with its pages brimful of the facts that have made Oklahoma notable in the history of individual States of this country. Twenty-three years ago the area now embraced in Oklahoma contained a population of less than 300,000. Now it has a population within a few hundred thousand of 2,000,000. Since 1890 the value

of its manufactured products has increased from \$429,000 to about \$53,000,000, its capital invested in manufacturing from \$300,000 to \$40,000,000, its annual lumber cut from 2,552,000 feet to 165,000,000 feet, its improved farm area from 563,728 acres to 17,496,000 acres, the value of its farm lands and buildings from \$8,581,000 to \$736,473,000, the value of its mineral products from \$785,000 to \$33,000,000, the length of its railroads from 1261 miles to 6250 miles, the resources of its national banks from \$617,846 to \$90,398,000, the deposits in its financial institutions of all kinds from \$358,966 to \$92,225,496, and the true value of all its property from \$268,050,000 to \$1,330,000,000. The *Daily Oklahoman* was almost at the beginning of things in Oklahoma. Its

anniversary edition is proof in itself that it has grown with the growth of the State.

GALVESTON CAUSEWAY.

Within practically five years of the passage of the act providing for its construction and within three years of the opening of bids for the work the magnificent reinforced-concrete causeway at Galveston, connecting the island and the mainland, will be formally opened on the 25th of this month. This structure, with provision for steam railroad tracks, interurban railway tracks and a county highway, is 10,642 feet long, including 2472 feet of reinforced-concrete arch bridge work, a 100-foot lift bridge, 4530 feet of causeway on the island and 3640 feet on the mainland. Its width is 66 feet, of which 29 feet are for the railroad section, 15 feet for the interurban and 22 feet for the county highway. There are 28 arches in the bridge in four series of seven arches each. The cost of the structure, which is a culmination of the improvements at Galveston following the disastrous storm of September, 1900, was about \$1,500,000. The structure itself has been completed, and work is being pushed by the transportation interests and others for completion of the approaches by the date of the ceremonies of the formal opening. This engineering achievement, of special moment for Galveston, is recognized as of advantage to the whole State of Texas, and nowhere is that fact better appreciated than at Houston, where preparations are being made for participation in the opening ceremonies. Houston men joined with those of Galveston in promoting the measures for the construction of the causeway, and now the Houstonians will be represented in a procession of a thousand automobiles from Houston over the causeway on the opening day.

LOUISIANA SULPHUR.

Within the past six or seven years the sulphur trade of the world has been revolutionized. Sulphur production, not including that derived from pyrites, in the United States in 1900 amounted to 3147 tons, and 167,696 tons were imported, the greater portion from Sicily. In 1910 the imports from Italy had fallen to 10,704 tons, and the production of the United States had increased to 255,534 tons. This radical change was brought about through the development of the sulphur deposits of Southwest Louisiana. The presence of this sulphur was known for many years, but because of peculiarities in its surroundings efforts to mine it on a large scale profitably were not successful until the application of the device of Herman Frasch. This is sketched by the United States Geological Survey as follows:

The mining of sulphur in Louisiana is an interesting process. The sulphur deposit, situated near Lake Charles, lies about 440 feet beneath the surface and is about 100 feet thick. Beds of quicksand overlying the sulphur render the sinking of shafts impossible, and the sulphur is therefore pumped to the surface. A well is driven through the numerous strata to the sulphur-impregnated beds, in much the same manner as is usual in sinking wells for oil and gas. In each well there are placed concentrically four lines of pipe, having diameters ranging from 10 inches to 1 inch. Superheated water and hot air are forced down the pipes and the spaces between them to melt the sulphur and to bring it to the surface. The hot water flows down between the two outer pipes, which are respectively 10 inches and 6 inches in diameter, and passes into the sulphur-bearing mass, melting the sulphur. The quantity of sulphur melted and the range of action of the water depend on the

temperature of the water and on the pressure at which it is supplied. The heavy melted sulphur runs back into the sump around the bottom of the well pipe, which it enters through holes provided for this purpose. Hot compressed air is forced down through the smallest or 1-inch pipe, and at the bottom of the well mixes with the melted sulphur and forms an aerated mass sufficiently low in specific gravity to allow the water pressure to elevate the melted sulphur to the surface, where it is discharged into large rectangular vats, constructed of rough planking. The dimensions of the vats vary somewhat, but they are made as large as 35x25x40 feet, and some of them are so arranged that railroad trains can pass between them. After the sulphur has cooled and solidified, it is regularly mined the same as if it were a natural deposit.

The uses for sulphur in the industrial arts are becoming of greater and greater importance, and have expanded in the past ten years more rapidly probably than in any other like period. Therefore, it is quite characteristic of the South, which is answering the calls of the world in so many other particulars, that it should have been the great factor in giving this country independence of other lands for its supply of sulphur.

THE MISSISSIPPI PROBLEM.

The emergency appropriation before Congress of \$1,500,000 for the repair and strengthening of levees along the Mississippi River is but a small portion of the amount of money that the Federal Government should spend as rapidly as the work can be done in so handling the Mississippi River problem as to make practically impossible a repetition of the loss of life and damage to property by annual floods in the river. Definite and accurate facts in all their completion about the results of this year's visitation are not yet at hand, but enough information has accumulated during the past month about the damage at various points in the Mississippi Valley from Southern Illinois to Northern Louisiana to warrant the belief that several hundred lives have been lost and that the value of property destroyed equals at least the \$18,000,000 or \$20,000,000 which expert opinion regards as the amount of money sufficient to give complete levee protection along the Mississippi River.

The loss of individual lives or the sweeping away of little family groups, more or less obscure, may not have some of the dramatic features of the loss of 1500 lives in the sinking of one ocean-going vessel, and consequently may not appeal to the form of public mind which is influenced by the newspapers. But that loss, to say nothing of the damage to property, should appeal strongly to the sympathies of the people of the United States, and in such a way that the representatives of people in Congress shall be moved to make prompt and liberal provision against repetition of it. Such a loss to the country is preventable. The prevention is the task of the whole country. It is the duty of the whole country.

Another Hydro-Electric Plant.

It is stated that R. W. Morrison of St. Louis and associates are planning to construct a hydro-electric plant on Osage River between Jefferson City and Kansas City, Mo., requiring two dams to develop 65,000 horse-power and an expenditure of \$5,000,000 for the entire plant and transmission system. John A. Laird of St. Louis, the engineer in charge, wires the MANUFACTURERS RECORD:

"Plans for Osage River hydro-electric development not in shape to give details. Will do so when they are finished."

Notes by the Way in Dixie.

Passing a splendid dormitory that is being built by Wofford College at Spartanburg, the peculiarly attractive-looking brick that are being used commanded attention. In reply to a question as to where they were made, the answer was Kingsport, Tenn., and then came a rehearsing of a story told in the MANUFACTURERS RECORD some months ago as to how Charles Catlett, a distinguished geologist of Virginia, had been engaged by the Clinchfield Railroad to investigate and find out what industries could be profitably established along its line. At Kingsport he discovered clay suitable for high-grade brick. The next question was how to find the right man to establish the right kind of brickyard. Through correspondence with many brick manufacturers and brick machinery makers he heard from several sources of a man in Georgia who seemed to meet the conditions. He went there, found the man, was impressed with him, induced him to go with him to Kingsport and study the situation, and out of this came the organization of a brickyard. So successful has the enterprise been that it is being doubled in capacity. It is already distributing bricks over several hundred miles of territory, and the strikingly fine brick seen in the dormitory is proof of what the concern is doing.

In the same way a cement location was found by Catlett at Kingsport. As a result of his investigation for the railroad and its co-operation, money was found and likewise the management for a cement plant, which now has a capacity of about 3000 barrels a day.

This intelligent creative work of the Clinchfield people in the development of their coal property, these cement and brick plants, and other interests, the character of construction work on the road with other plans, are typical of what could be brought about in every part of the South. Many railroads are intelligently pursuing the same policy as the Clinchfield, but in proportion to its mileage the magnitude of the industrial development work which it is carrying on is rather astonishing. And yet it is giving its attention to fruit-growing interests in the territory tributary to it, to diversified farming, to the utilization of water-powers by those who want to make water-powers available, and to the development of the almost limitless potentialities of the country, based on its magnificent climate, as energetically as to industrial operations.

In the building of good roads Mecklenburg county, North Carolina, years ago took the lead in the South. Partly through the fact that it was one of the pioneers in good road building, and partly through the activity of a few Charlotte people in making this good road campaign known through the country, Mecklenburg got more credit for road building than any other county in the South. In fact, very many people in the North for many years labored under the impression that Mecklenburg was about the only county in the South doing broad and intelligent road building. In this respect it received the benefit of the intelligent, alert publicity given to its road building through illustrated magazine articles and constant newspaper stories for which D. A. Tompkins was very largely responsible. It is a great pity that every county in the South that is doing road building hasn't some one man with equal ability to tell the story and to know how and when and where to reach the public to make its road-building campaign widely known.

As Mecklenburg was a leader in road building, so it is now doing a pioneering work in drainage operations which promises to make it a leader in the particular kind of drainage work that it has undertaken. Running through the county, as through many counties in all parts of the country, there are a number of winding streams somewhat sluggish in their flow in dry seasons, while after heavy rains they go rushing down their crooked beds, causing the waters to overflow many low places, running the land for cultivation and producing conditions conducive to fevers and other sickness. Throughout the South many districts are carrying on great drainage enterprises for the purpose of reclaiming land, but Mecklenburg county is carrying on great drainage operations, not so much for the purpose of reclaiming land as for the purpose of cleaning out the streams, straightening their course and giving a free flow in a well-cut channel. It is calculated that the deepening of the beds of these streams will very greatly increase the healthfulness of the county and carry off the sewage that empties into them without injury to the surrounding country.

The county bought from the Fairbanks Steam Shovel Co. of Marion, O., the plans and the machinery for building two dredging boats. The boats themselves were constructed according to the plans furnished by local mechanics right on the edge of the streams to be dredged. The total cost was about \$10,000 each. The machinery was placed on board under direction of an engineer supplied by the Fairbanks Company, and the dredges were then ready to cut their way down the streams to be cleared and opened up. In this work turns and twists and sharp angles of the streams are cut out, the dirt thrown on embankments on the side, and instead of a winding, sluggish stream that might be five feet wide in some places and 25 feet in another, and from 200 to 300 feet or more at time of high water, there is a straight stream in a channel cut deep enough to carry off the rush of water, even after heavy rains. In doing this there is a saving of land, which, like some of the output of many factories, is a by-product, but the by-product becomes valuable enough to pay the cost of operation. The plans were undertaken from a health point of view rather than from that of saving the bottom lands, but the reclaiming of these bottom lands promises to far more than justify the entire expenditure. The cost of drainage is assessed against adjacent lands in proportion to the added value which will be given to them, just as in the opening of a street in a city the assessment is in proportion to the benefits to be derived.

It is estimated that in Mecklenburg county enough rich bottom land will thus be saved to add annually more than 600,000 bushels to the yield of corn in that county. These lands are not now workable, except to a very limited extent, for the constant overflow destroys their value for agricultural purposes. This work, upon which considerable progress has been made, set an example for every county in the country similarly situated. In the overflowed or swamp lands reclamation operations throughout the South, where millions of acres are being reclaimed by great drainage operations, are undertaken solely for the purpose of making the land available, but Mecklenburg county has undertaken this drainage scheme in order to give a better flow to its meandering streams and to turn them into straight, deep, swift-running channels. Incidentally

it redeems the bogs and swamp spots along the low places. In this way it makes a thing of beauty and of health out of a thing of ugliness and injury to health. In the doing of this it finds that the value of land which is saved will probably more than equal the entire cost of the work. It thus literally creates values, as well as better health conditions, practically without cost. Mecklenburg's campaign of years ago for road building was not more important than its present campaign for drainage of this kind, and it will doubtless become as widely known as a leader in this splendid work as it did for good roads.

Mecklenburg's roads are, as a whole, better than Charlotte's streets. The city of Charlotte, with all of its splendid growth, has depended too largely upon dirt roads in its suburban section rather than upon well-made, paved or macadam work. It has some excellently paved streets in the heart of the town, but as the streets extend out into the suburban districts their inferiority to the county roads is very striking. One need not be told when he crosses the line between Charlotte and Mecklenburg county, in which Charlotte is situated, for he can immediately detect the better class of road construction on the county side.

With its magnificently shaded streets, its splendid growth, and its ambition to make of itself a big city, Charlotte needs a great street improvement campaign. With the energy which its people have displayed, the wealth which has been created in and around the city, and the vast industrial development within a radius of 50 or 100 miles, and for which, in early days, Charlotte set the pace, it is somewhat surprising that it has permitted dirt roads to answer in so many places, even in some thickly-settled dwelling portions, for paving. Charlotte ought, if it would utilize to the fullest extent its opportunity, make itself as widely known for municipal improvements, for good streets, stretching well out into the suburbs, as Mecklenburg county made itself known for its splendid roads. This campaign is now on, and contracts have lately been awarded for a large amount of street work which will have a marked effect upon Charlotte's future. If followed up persistently until the whole city has good streets, Charlotte will continue to lead in good works.

R. H. E.

American Mechanical Engineers.

Among the papers to be presented at the spring meeting of the American Society of Mechanical Engineers at Cleveland, O., May 28-31 are: "A New Analysis of the Cylinder Performance of Reciprocating Engines," by J. Paul Clayton; "Equipment of a Modern Flour Mill on a Gradual Reduction System," by John F. Harrison and W. W. Nichols; "Design and Mechanical Features of the California Gold Dredge," by Robert E. Cranston; "Problems in Natural Gas Engineering," by Thomas R. Weymouth; "Sound Waves: How to Photograph Them and What They Mean," by Dr. Dayton C. Miller of the Case School of Applied Science; "New Processes for Chilling Cast Iron," by Thomas D. West; "Strength of Steel Tubes, Pipes and Cylinders Under Internal Fluid Pressure," by Reid T. Stewart; "On the Control of Surges in Water Conduits," by W. F. Durand; "Speed Regulation in Hydro-electric Plants," by William F. Uhl; "The Present State of Development of Large Steam Turbines," by A. G. Christ; "A Discussion of Certain Thermal Properties of Steam," by G. A. Goodenough, and "The Reduction of Temperature of Condensing Water Reservoirs Due to Cooling Effect of Air and Evaporation," by W. B. Ruggles.

CEMENT IN EXPORTS.

Interesting Phase of the Development of the Industry.

Cement production, consumption and exportation are showing remarkable increases in the statistical records of the United States, as shown by figures of the Bureau of Statistics, Department of Commerce and Labor, while the importation shows an equally remarkable decline. The quantity produced, according to figures of the Bureau of Statistics presented in its Statistical Abstract, just issued, has grown from 8 million barrels in 1890 to 17 million in 1900 and 78 million in 1910, the value having increased from 6 million dollars in 1890 to 13 million in 1900 and 69 million in 1910. Meantime, the figures of imports and exports show equally striking changes. The quantity of cement exported has grown from 76,055 barrels (of 380 pounds) in 1900, valued at \$163,162, to 2,971,474 barrels in 1911, valued at \$4,349,290, while the figures for the nine months ending with March indicate that the total for the fiscal year 1912 will considerably exceed, in both quantity and value, that of 1911, and will probably amount to more than 3 million barrels, or 40 times as much in 1912 as in 1900, with a value of more than \$5,000,000, as against \$163,162 in 1900. On the import side the decline has been as rapid and striking as the increase on the export side. The quantity of cement imported in 1907 was 1,123,763,604 pounds, but by 1911 had fallen to 93,297,749 pounds, and in the fiscal year 1912 seems likely to fall below 50 million pounds, or less than one-twentieth of the imports of 1907.

The United States is apparently leading the world in the production of cement for industrial purposes. The latest figures available in the Bureau of Statistics with reference to production in various parts of the world places the production in Germany at about 30 million barrels, or considerably less than half that of the United States, and that of England slightly less than 20 million barrels. Of the 78 million barrels produced in the United States in 1910 a very large proportion is consumed at home, the exports for that year being but about 2½ million barrels. The total consumption in the United States, according to the best available figures, has grown from about 20 million barrels in 1900 to 74 million in 1910.

The cement in question, which is chiefly of the class designated as "Portland" cement, is, according to a statement by the Geological Survey, produced by burning a finely-ground artificial mixture containing essentially lime, silica, alumina and iron oxide in certain definite proportions. This combination is made by mixing limestone or marl with clay or shale, or by substituting low magnesia blast furnace slag for the clay or shale. The clay, or its equivalent, furnishes silica, alumina and iron oxide. Impure limestone, called "cement rock," in which all the ingredients are present in nearly the proper proportions, is also much used. The product of the burning is a semi-fused mass called "clinker," which is finely ground, and after such grinding the powder (Portland cement) will set under water.

Pennsylvania is by far the largest producer of cement, about one-third of the 78 million barrels produced in 1910 being the product of that State, the States following next in order of production being Indiana, Kansas, Illinois, Missouri, New Jersey, Michigan and New York.

The cement industry, according to the census of 1910, showed number of establishments, 135; capital invested, \$187,398,000; number of wage-earners, 26,775;



HEARD NATIONAL BANK BUILDING, JACKSONVILLE.

Under construction for Heard Investment Co.; 15 stories; Spanish Renaissance architecture; main floor to be occupied by Heard National Bank; upper floors to contain 350 offices; exterior of Vermont marble, white brick and terracotta; one freight and four passenger elevators to be installed by Otis Elevator Co., New York; three-story vault in rear of banking-room lined with burglar-proof steel; safe deposit department with lobby and burglar-proof door; cost \$600,000; architect, John Kevan Peebles, Norfolk; contractor for foundation, Southern Ferro Concrete Co., Atlanta; separate contracts for superstructure, most of work being done by E. W. Minter & Co., New York.

wages paid, \$15,320,000; cost of materials, \$29,344,000; value of products, \$63,205,000; value added by manufacture (value of products less cost of materials), \$33,861,000.

Panama now takes over 65 per cent. of the cement exported from the United States, the total exported thereto in the fiscal year 1911 having been nearly 2 million barrels out of a total of 3 million, while various countries of North and South America took most of the remainder. Cuba was credited with 429,000 barrels, Mexico 194,000 and Canada 153,000. Other countries, some 35 in number, appear in the list of destinations, but in no case did the total in 1911 amount to as much as 50,000 barrels. Of the 93 million pounds of Roman, Portland and other hydraulic cement imported in the fiscal year 1911, 45 million pounds were from Germany, 31 million from Belgium, 8½ million from England, 6¼ million from France and 1¼ million pounds from China.

Quick Work on Levees.

Mr. Lyne Starling, clerk of the City Council of Greenville, Miss., writing to the MANUFACTURERS RECORD regarding the levee work being done at Millers Bend, a few miles above Greenville, and of emergency measures to meet the rise in the Mississippi, says:

"By an eccentric change in the current the water rose relatively higher at this point than on former occasions of high water, and it became necessary at very short notice to raise this levee from two to three feet for a distance of nearly 12 miles. By rushing 500 of the State convicts here and calling on the nearby plantations more than 1000 men were put on this work, which was done principally with earth-filled cental and cottonseed sacks. The water actually rose to the third tier of sacks, showing how much it would have topped the levee if the work had not been done."

Co-operative Banking and Home Building.

By D. A. TOMPKINS of Charlotte, N. C.

The local building and loan association has been perhaps the most notable success ever achieved in the world for co-operative savings and home-building. The principles involved are often used outside of the building and loan association, and amongst these principles are the use of the rent money to help buy a home. Wherever these associations have been established upon the right principles they have been so successful as to invite other organizations whose purpose, to begin with, was to swindle, or which degenerated into swindling institutions. There is a great need at the present time of a general overhauling of laws relating to the building and loan associations and for the adoption and legalizing of a name to prevent imitations. These co-operative institutions are not new. In Philadelphia they have prospered for 75 years or more. It is the influence of these undoubtedly which has made Philadelphia a city of working people's homes. These associations have spread from Philadelphia to Wilmington, Del., Baltimore and Washington, and all these cities are notably cities of homes owned by working people and others. In the central West, particularly Ohio, Indiana and Illinois, the building and loan systems of co-operative banking and home-building have been phenomenally successful. In some Southern cities, as, for example, Charlotte, N. C., as a central point, the local building and loan association has been peculiarly successful, and the population of Charlotte is largely a home-owning population through its instrumentality.

I summarize briefly some of the things which it looks as if the laws of the States might bring about as safeguards, and which are as follows:

Taxes.

The building and loan association ought not to be taxed. The reason is that all building and loan money is borrowed and instantly goes into houses, and these are taxed. The building and loan as an influence toward home-owning by the people is beneficent enough to be free from taxes like a school or church is. The building and loan should never own any property, and should never have any accumulated money. It should act as a trustee of a moving fund for its members.

Name.

The powers and privileges of the building and loan ought to be well defined, and then no other corporation should be allowed to use the name "building and loan." Gigantic swindles have been perpetrated by using the building and loan name to cover up a fraudulent institution.

Fines.

A fine of five cents for the first default ought to be allowed. This is part of that little coercion necessary to make members pay their instalments promptly and keep faith with their saving engagements, with themselves and with the building and loan and other members.

Examination.

Building and loans ought to be inspected by a bank examiner, or, better still, by a building and loan commission, the chairman of which should have a salary and do nothing but look after the building and loan and see to the enforcement of the law.

Serial or Individual Plan.

A building and loan charter should authorize a building and loan to run the serial plan or let individuals take stock

one at any time according to the "Dayton Plan," or just as savings banks do. There seems to be no reason to confine the building and loan to the serial plan.

Expenses.

No building and loan should be allowed to spend more than 2 per cent. of its annual receipts as expenses. When an association gets large, 1 per cent. is quite sufficient to cover the expenses. The expense allowance might be 2 per cent. up to 1000 shares, and then 1 per cent. after that.

Maturity of Shares.

There is no use limiting the time that building and loan shares shall mature to six and one-third years, or any other time, except what is agreed upon as the subscription. Many a family might carry building and loan for the purchase of a home if it could carry it at a premium that did not exceed its rent money. The instalment could be made to fit the rent money, and then the time of maturity fixed to suit the instalment.

Fire and Life Insurance.

Every building and loan ought to be authorized to carry fire insurance and life insurance for its members. These to be reinsured in regular fire insurance companies and in regular life insurance companies. The premium of these insurances should in each case be made into instalments, the same as the other building and loan payments, so that one fixed premium could be arrived at for the building and loan payment and for life insurance and fire insurance. Then if the stockholder died or the house burned up, or both, the widow and family would always be sure to get the value of the house, and all obligations ended.

Area for Lending.

Each building and loan association or co-operative bank should be required to make all its loans in a limited local territory or zone thoroughly known to its local stockholders. All interstate institutions which made scattered loans have failed.

The Building and Loan for Farmers.

The system of co-operative savings, or savings and home-building by regular instalments, has been phenomenally successful in the United States. In Germany there is a system of Land Loan Banks, which seem to be much on the same plan, except that instead of making instalments weekly and monthly, there are about four instalments a year against the maturity of crops. This is when the farmer has money and is able to pay when the crops are being marketed. As, for example, a cotton farmer would be apt to market his cotton from October until January. He would pay his instalment in October, November, December and January, one instalment each month, when he sold part of his cotton. In Germany these co-operative banks are called "Land Loan Banks," but it is a building and loan principle applied to the farmer.

Massachusetts in Advance as to Law, Operation and Results.

In Massachusetts all building and loan associations are required now to assume the name of "Co-operative Banks," and are under State control, just as the National banks have an exclusive title and are under the control of the Federal Government. I regard it exceedingly important that the different States shall define what these co-operative banks or building and loan associations are, and then allow

no other corporation or person to use that title except those which conform to the law.

Different Features.

Different features have developed in different parts of the country. In Pennsylvania the par value of the stock is usually \$200 and the time is about 11½ years. In North Carolina the par value is \$100 and the time is 6½ years. In the Central Northwest there is a plan known as the "Dayton Plan," which runs without series, and which sets aside a small percentage as a surplus fund, and which I think runs about 6½ years. By the payments, 25 cents weekly, the par value is reached in about 6½ years. If the payments are \$1 monthly the par value, \$100, is reached in about 7 years or a little less.

Magnitude and Importance.

Very few people appreciate the magnitude of the work of the building and loan associations or what might be called co-operative banking and home-building societies. The aggregate money carried at any one time by the building and loan associations of the United States is about equal to the aggregate capital of the National banks. A newspaper writer in Charlotte, N. C., obtained data as to what the building and loan associations have done in that city in the way of building houses. He found that, according to the records of the building and loan associations, more than 5000 houses in Charlotte have been built through the instrumentality of the building and loan. Charlotte is a city of 35,000 population, according to the United States Census. Counting the average household as being five people, this would show that 25,000 people out of a total of 35,000 have been housed through the building and loan. This is not all that the building and loan has done there, because many stockholders did not borrow money and build houses, but drew out large sums of money in cash as accumulated savings.

Unsafe and Fraudulent Use of the Name "Building and Loan."

The building and loan association has suffered enormously because of wild-cat institutions starting and advertising wild-cat businesses as building and loan associations when they were not. These have generally done business over large territories. It is important that each association be local, and that its income be loaned locally. People who know each other co-operate best.

Legal Protection.

Whenever the good points of this system of co-operative banking and home-building and savings are gotten together in a good law, and whenever the bad features are eliminated and swindling institutions are forbidden, it will be found that there will be a tremendous advance in the uses of the principle of regular instalment savings, and the use of the money for building home or otherwise, as may be desired.

Life Insurance Funds Available.

One of the big life insurance companies has lately devised a plan for putting at the service of working people loans out of its big accumulated fund, coupled with life insurance, and with premiums arranged on the instalment plan. The mutual life insurance companies are themselves co-operative, and their premiums are generally annual or semi-annual. Where they make loans for home-building on the basis of a life insurance policy and of the real estate which the loan represents, and makes a monthly instalment payment of the whole premium together, it is an application of the building and loan principle with life insurance at first hands. This puts a big

fund at the service of the people for home-building; it makes a big field for the insurance companies to loan out in the aggregate large sums of money at a good rate of interest. There is a slogan used by some real estate people, "Buy a Home with Rent Money." By making the term of years variable to suit the premiums, the rent money may be always made to pay the premiums. Rent money will buy a house in 10, 15 or 20 years. In many cases the building and loan term of 6½ years is sufficient for the rent money to buy the house. Nothing would seem to be more shortsighted and foolish than the expression, it is cheaper to rent than to buy a home. As a matter of fact, every man renting throughout lifetime during the period of a generation pays rent money enough to buy two or three houses. In addition to that, he loses the training that the family gets in a home that it cannot get in a rented house. Also the thrift and economy and pleasure that is developed by looking after one's own home as against the adverse influence of controversy with the landlord about improvements. The home-owner makes the improvements, gets them cheaper and enjoys them. The renter lives without many improvements, and is nearly always in more or less controversy with the landlord.

Central Georgia Transmission Co.

Georgia Railroad Commission granted the application of the Central Georgia Transmission Co., subsidiary to the Central Georgia Power Co., both of Macon, Ga., to issue \$2,000,000 of common stock and \$2,500,000 of first mortgage bonds, according to plans and specifications for construction and improvements approved by the commission. The plans provide for transmission lines and substations in connection with the Central Georgia Transmission Co.'s purpose to transmit electricity to various cities, including Atlanta. The details are summarized as follows:

"General organization, \$25,000; purchase of rights of way and construction of 66,000 voltage steel tower transmission line from Griffin to Atlanta, \$188,500, distance being 34 miles; erection of brick and concrete substations of 9000-kilowatt capacity, with apparatus, in Atlanta, \$82,500; substations at Hampton and Jonesboro, each of 900-kilowatt power, with apparatus, \$25,000 each; acquisition of land and erection and equipment of steam plant of 5000-kilowatt power, \$125,000; construction of distribution lines in and around Atlanta, \$117,500; acquiring right of way, constructing and equipment of 66,000 voltage transmission line from Griffin to Barnesville, Thomaston, Manchester, Newnan, La Grange and West Point, distance of 150 miles, 11,000 voltage transmission line to Grantville, Hogansville, Palmetto and Fairburn, 46 miles, with substations at Thomaston, Manchester, Newnan, La Grange and West Point, and 31 miles, distributing lines, \$1,035,000; acquiring lands, 66,000 voltage high-tension line from Central Georgia Power Co.'s plant on Okmulgee River to Covington, Social Circle, Madison, Monroe, Monticello and Eatonton, 81 miles, and erection of substation at each city of 900-kilowatt capacity, and 30 miles of distributing lines at each station, \$685,000. Figures embraced within scope of plans are 283 miles transmission lines, 95 miles in distributing system, auxiliary steam plant in Atlanta and 14 substations with combined capacity of 26,100 kilowatts. Plans submitted by commission to Riggs & Anderson of Ann Arbor, Mich., consulting engineers, and they approved."

Resume of One Month's Southern Construction Items

In April the MANUFACTURERS RECORD published 4848 items relative to the inception and progress of general industrial developments and building operations in the South and Southwest. Under descriptive and State headings, these have been shown as relating to every phase of development from land drainage to factory equipment, and from contemplated railroad and building plans and purchases of sites to construction bids and prices on materials. The latter department—that of "Machinery, Pro-

posals and Supplies Wanted"—has, as usual, included some foreign requests, these coming from South America, Europe, Asia and the Philippine Islands.

These nearly 5000 brief statements, with their suggestions to men of capital and business acumen, to architects and contractors, engineers, machinery and materials manufacturers and dealers, and many others, are concisely summarized in the following table:

	ALA.	ARK.	D.C.	FLA.	GA.	KY.	LA.	MD.	MISS.	MO.	N.C.	OKLA.	S.C.	TENN.	TEX.	VA.	W.VA.	TOTAL.
INDUSTRIAL AND DEVELOPMENTAL.																		
Bridges, Culverts, Viaducts.....	1	2	..	3	3	..	1	3	2	4	3	2	3	7	15	5	3	57
Canning and Packing Plants.....	2	1	..	4	1	1	..	6	2	1	2	2	1	..	5	2	1	31
Clayworking Plants.....	2	1	..	1	..	1	..	1	..	2	3	1	..	1	5	1	..	19
Coal Mines and Coke Ovens.....	3	..	..	..	1	7	..	1	..	1	..	2	..	1	2	2	11	31
Concrete and Cement Plants.....	1	1	..	..	1	2	..	1	..	1	..	..	..	..	..	..	..	7
Cotton Compresses and Gins.....	..	1	..	..	4	..	1	..	1	..	1	..	3	1	11	..	..	23
Cottonseed-Oil Mills.....	1	2	..	1	2	..	..	..	..	..	1	..	..	..	5	..	1	13
Drainage and Irrigation.....	..	4	..	3	..	..	6	1	..	1	2	1	..	2	14	..	..	34
Electric Plants.....	1	8	1	1	10	3	2	5	8	3	4	5	..	..	10	4	2	67
Fertilizer Factories.....	2	..	..	5	4	..	..	1	..	..	1	..	..	..	..	3	1	17
Flour, Feed and Meal Mills.....	1	1	..	1	..	3	..	..	..	..	3	..	1	..	3	2	..	15
Foundry and Machine Plants.....	4	..	..	..	..	..	..	1	2	4	2	2	..	4	2	3	..	24
Gas and Oil Developments.....	..	..	..	..	..	4	..	3	1	..	21	..	1	8	..	..	8	46
Ice and Cold-Storage Plants.....	2	5	..	1	4	3	1	..	1	1	3	1	1	9	16	3	1	52
Iron and Steel Developments.....	2	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	5
Land Developments.....	4	1	..	7	2	1	1	2	1	3	3	1	2	6	14	3	3	54
Lumber Manufacturing.....	5	7	..	3	9	4	7	1	4	1	10	2	6	6	3	6	3	77
Metal-Working Plants.....	..	1	..	..	..	..	1	..	1	..	..	2	..	2	2	..	..	8
Mining.....	1	..	..	..	4	..	1	..	2	5	1	3	..	2	4	6	1	30
Miscellaneous Construction.....	3	..	1	5	..	..	4	5	..	3	1	..	..	1	8	1	2	34
Miscellaneous Enterprises.....	2	3	..	1	6	4	5	9	3	9	8	7	2	3	12	9	4	87
Miscellaneous Factories.....	8	4	3	7	8	5	11	23	7	17	16	7	10	14	27	15	4	186
Motors and Garages.....	1	1	1	2	12	..	3	4	..	5	3	..	1	1	9	5	1	49
Railway Shops, Terminals, Roundhouses, etc.....	..	..	..	1	1	..	1	1	..	1	..	..	..	..	5	3	2	15
Road and Street Work.....	24	6	1	11	15	6	8	8	18	15	15	..	5	18	39	25	5	219
Sewer Construction.....	3	2	1	6	5	..	4	5	5	9	6	..	2	4	14	4	4	74
Telephone Systems.....	2	3	..	1	2	1	1	..	1	1	5	6	6	5	2	1	3	40
Textile Mills.....	..	..	..	1	2	..	1	..	..	25	..	8	3	1	2	1	..	44
Water-power Developments.....	5	3	..	..	..	3	..	3	..	2	4	2	1	6	1	2	1	33
Water-works.....	3	4	1	6	15	4	4	6	8	5	10	10	3	5	19	6	2	111
Woodworking Plants.....	2	6	..	1	1	1	4	4	1	3	7	2	1	7	8	2	4	54
BUILDINGS.																		
Apartments.....	2	3	10	7	9	5	1	4	..	89	4	..	1	11	17	13	..	176
Association and Fraternal.....	1	4	1	4	3	3	3	3	1	2	1	1	2	2	10	2	4	47
Bank and Office.....	5	4	10	9	11	7	5	6	4	7	13	3	11	5	17	9	6	132
Churches.....	7	5	4	4	7	7	9	6	5	6	13	1	8	6	18	3	6	115
City and County.....	5	..	2	8	9	3	4	3	2	4	7	2	1	7	16	2	..	75
Courthouses.....	3	4	..	3	2	2	1	..	2	1	2	..	..	1	3	..	1	25
Dwellings.....	18	9	26	26	31	10	15	72	1	82	41	13	13	39	54	61	7	518
Government and State.....	3	2	1	3	..	1	2	6	2	2	..	2	4	..	5	2	2	37
Hotels.....	8	4	..	15	6	2	5	3	2	4	12	..	7	4	11	5	..	88
Miscellaneous.....	7	2	3	7	3	9	4	9	1	9	11	1	2	6	10	12	2	98
Railway Stations.....	1	..	..	6	3	1	..	1	1	4	1	2	1	2	5	..	1	29
Schools.....	4	9	1	9	15	6	10	5	9	8	12	6	13	11	55	11	11	195
Stores.....	18	8	13	26	18	5	11	10	6	30	13	2	17	9	51	17	8	262
Theaters.....	1	2	3	1	..	1	2	2	..	4	1	2	..	..	3	3	1	26
Warehouses.....	3	..	..	3	6	7	1	15	..	4	5	5	1	6	11	8	1	76
RAILWAYS.																		
Steam.....	5	6	1	9	12	12	7	6	8	13	14	13	2	10	36	11	10	175
Street.....	2	..	2	2	1	2	1	..	..	1	2	1	2	2	6	1	1	26
FINANCIAL.																		
Corporations.....	11	7	4	6	13	2	12	2	5	4	14	7	12	13	34	2	3	151
New Securities.....	13	8	..	19	39	9	11	5	32	29	25	26	17	29	93	20	20	395
Burned, etc.....	202	144	90	238	299	145	173	251	150	401	329	167	170	274	719	298	152	4222
Machinery, Proposals and Supplies Wanted.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	119
Total for April.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4848
Previously detailed for January, February and March.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15339
Total for Four Months.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20187

FORT WORTH'S NEW RESERVOIR.

One Million Dollars Being Spent on the Project.

[Special Cor. Manufacturers Record.]

Fort Worth, Tex., April 25.

The new reservoir for the city is on the west fork of Trinity River, up-stream from Fort Worth, the dam being about seven miles from the city in a north-westerly direction, and the lake formed by this dam extends some eight miles northwest from the dam. The drainage basin above the dam has an area of 1800 square miles of territory, and is a splendid watershed for gathering a city water supply.

The total length of dam across the stream and valley is 3500 feet. The dam is divided into three sections, a concrete masonry section for the spillway near center of the dam, and an earth section extending each way from ends of the masonry section. The masonry section is 59½ feet high, and has a spillway 700 feet long in the clear and designed to pass 75,000 cubic feet of water per second.

The maximum height of the earth dam is 72 feet. Both earth and masonry sections are so designed and to be built as to provide for raising them at some future date five to seven feet by merely adding to their tops. The masonry section of the dam is of the ogee type, and the escaping water glides along the downstream face.

The lake first to be formed will have an area of 3500 acres, and will hold 22,000,000,000 gallons of water when just level with the crest of the spillway, and when six feet is added to the height of the dam the lake will hold 30,000,000,000 gallons. This six-foot raise can be added at nominal cost.

It is expected that during and just after excessive rains the main reservoir will become quite turbid, and on this account settling reservoirs are provided to hold about three weeks' supply, through which all water going to the filter plant in the city must pass. Water leaving the main reservoir is therefore three weeks on its way to the filter plant, and during this time it is expected that substantially

all mineral sediments will be eliminated and the water be in good shape and nearly clear when delivered to the filter plant recently constructed by the Pittsburgh Filter Manufacturing Co. of Pittsburgh, Pa.

Water from the main reservoir is conveyed to the city by gravity through settling reservoirs and concrete conduits having capacity of 23,000,000 gallons daily, and is delivered to the filter plant by gravity. Provision is also made for conveying water from the main reservoir to the filter plant via two river channels, and then lifted by duplicate centrifugal pumps to the filter. This is done to avoid trouble in case of accident to the conduit.

The filter plant is on the Clear Fork of the Trinity River, about one mile above its junction with the West Fork, on which is located the main reservoir, and in order to make the water flow from main reservoir to filter plant through the river channels a second dam has been built across the West Fork below the junction of the Clear Fork high enough to back

the water up the Clear Fork to the filter plant, thus affording dual conveyor methods.

The total cost of this project, with all its appurtenances, is estimated at \$1,000,000, and it is expected that all will be completed by December 31, 1912. The work is being done under the direction of a board of engineers consisting of J. D. Trammell, chairman; T. U. Taylor and J. B. Hawley.

CHARLES E. TRIMBLE.

Arkansas Water-Powers.

Judge John W. Meeks, Mammoth Spring, Ark., writes to the MANUFACTURERS RECORD:

"I have read with interest in one of your recent publications an article on the development of hydro-electric power in the South. We have some fine water-power here in the Ozark Mountains, unknown to the outside world, but we need capital and men of experience in such to develop it."

Mississippi's Natural Wealth

MINERAL, TIMBER AND AGRICULTURAL RESOURCES AWAITING DEVELOPMENT.

[Special Correspondence Manufacturers Record.]

Jackson, Miss., April 20.

Here is the long-time capital of a great State, rich in manifold opportunities. Jackson grew from a population of 7800 in 1900 to nearly 22,000 in 1910. There has likewise been a notable increase in rural population all over Mississippi and a distinct advance has been made in diversified farming hereabouts and throughout the State. Settlers are coming in; outside money is being invested in the work of colonizing and developing the agricultural and other resources of the State, and Mississippi is going ahead, not as rapidly as it should, but going ahead some.

Mississippi needs settlers to occupy her millions of acres of vacant lands; she needs men and money for the development of her various mineral resources and her enormous timber supplies. There are no finer lands in the world that those of the so-called Delta, which stretches from Memphis to Vicksburg in elliptical shape, with a length of 200 miles and a width of 60 miles at the widest part. It extends from the Mississippi River to the rim of Bluff hills, and has an area of about 8600 square miles, or over 5,500,000 acres. About one-third is in cultivation, and the other two-thirds can be brought to cultivation by proper drainage. It is served by the Yazoo and Mississippi Valley branch of the Illinois Central Railroad, and in it are some of the finest plantations in the South. It grows a long-staple cotton superior to the Egyptian, and is also adapted to stock raising and general agriculture.

There is a world of work to be done in Mississippi. With all its wealth of timber, there is so little development of manufacture that 92 per cent. of the oak timber sawed, as an illustration, was either used in the rough or shipped out of the State to be further manufactured elsewhere. The timber industry is by far the largest in the State, the total value of products being some \$43,000,000 annually, which is 53.1 per cent. of the total value of products of all the manufacturing industries of the State. There are about 40 varieties of wood used commercially in Mississippi out of the 80 or 90 varieties that grow in the State.

The wooded area is about 32,000 square miles, or 70 per cent. of the whole. Long-leaf yellow pine constitutes the largest variety manufactured. With the four other varieties of pine that are mainly utilized, the short-leaf, Cuban, Loblolly and Pond, the pine product was not only the largest in the sawmill output, but in the woods further manufactured within the State, the five pines supplied 89 per cent. of the whole, while 20 other woods, 19 of them being hardwoods, furnished the other 11 per cent. Mississippi brings in but 1 per cent. of wood from outside States to supply her factories, but ships to other States, and through Gulf ports to foreign countries, millions of feet of lumber, thus scattering her wealth of raw material to other regions to build up their industries, while her own are but slowly developing.

Mississippi is the thirty-fourth State in the Union in value of manufactured products. During the past decade there has been a marked increase in the number of industries and in value of manufactured products, but in view of the fact that Mississippi's wealth of natural resources places it among the most fortunate States of the whole country, it is palpable that it ought to be nearer front rank than

thirty-fourth. Planing mill products, mainly flooring, ceiling and siding, almost entirely of pine and usually produced in connection with sawmill operations, constitute the leading item in wood manufacture. An article on the wood-using industries of Mississippi has recently been prepared by C. W. Gould, forest agent, and Hu Maxwell, expert, under the direction of H. S. Sackett, chief of the office of wood utilization, forest service, United States Department of Agriculture, and by arrangement with the department given publicity by the *Lumber Trade Journal* of New Orleans. This article, from which the following facts as to woodworking are derived, gives the number of planing mill operators in Mississippi as 80.

The second largest industry in a woodworking line in Mississippi is given as the making of boxes and crates. Thirteen manufacturers are named. Cottonwood, which grows abundantly and luxuriantly, and is one of the woods counted on for reforestation, is mainly employed, with red gum second. Other woods are varieties of pine, yellow poplar, black willow, white elm and evergreen magnolia.

Nine furniture factories are enumerated. Red gum leads in the list of furniture woods in Mississippi and supplies nearly twice as much as any other. This, by the way, is a most remarkable wood, formerly regarded as worthless, and even yet not generally appreciated, for I am informed here that stumpage can be bought in large quantities at \$3 a thousand. Mississippi formerly had the largest body of red gum timber in the world. Vast quantities of it fell before the axe of the pioneer, who burned the logs after the manner of all the pioneer settlers in the wooded countries, in order to get at the land for agricultural purposes. Nevertheless there are still vast quantities of red gum in Mississippi, it being found along practically every stream in the State, and there is even scarcely a branch three feet deep that hasn't red gum along the banks. Under favorable conditions the trees are found three to four feet in diameter, standing perfectly straight and 40 to 60 feet to a knot, bump or limb. Because it warped badly if exposed to the elements, red gum was formerly considered of little or no value. By modern methods of seasoning and treatment it has been made to develop remarkable qualities. Red gum is more used for veneer than any other American wood, and much of it is cut from what are known as sap-gum logs. If selected, sap veneer so closely resembles Circassian walnut as to take that name when made into furniture. Thus it has come about that furniture makers in this country and in Europe not only use red gum under its own name, but finish it in imitation of other woods, such as mahogany, cherry, walnut, birch, maple and oak. In England it is made into furniture under the name of Satin walnut. There is a good market for red gum in France and Italy, and there it is said to become French and Italian walnut, and as such it finds its way back to this country in expensive furniture patterns. As red gum itself, properly treated, it makes a rich, handsome appearance, and its adaptability to various uses and the rich finish of which it is susceptible ought to make it a more highly prized wood as time goes by.

Oak, poplar, tupelo, cottonwood, white ash, cypress and long-leaf pine are other woods used by the few furniture manufac-

turers of Mississippi. A little more than 10,000,000 feet of timber was used in the year covered by the Government report named. The average cost of this material was \$13.44 per 1000 feet. In the language of the article: "That indicates a remarkable opportunity for building up a furniture manufacturing business in Mississippi. Cheap material ought to more than offset high freight rates in carrying the finished product to market. If Northern furniture manufacturing business in Mississippi, freight it north, make furniture of it, ship furniture back and sell it in the region where the timber grew, there ought to be business for somebody in making and selling the finished article near the source of the raw material. The amount of furniture now made in Mississippi is a fair beginning only. There are possibilities of enormous expansion. Every foot of the wood used in the furniture factories of the State grew in Mississippi. It is doubtful if another State in the Union can make that showing."

There are 16 manufacturing plants engaged in making vehicles and vehicle parts, most of them making single parts, like hubs, or spokes, or poles and shafts, so that the industry is but slightly developed. White oak, hickory and yellow poplar are the three chief vehicle woods in Mississippi, and constitute more than 97 per cent. of all the woods used in the industry. Of white oak 4,636,000 feet were used; of hickory 4,326,000. Both these woods are susceptible of reforestation when the present supply is exhausted. Yellow poplar is increasing in price as it becomes scarcer, so that substitutes are being used for wagon beds, cottonwood, willow and some of the pines now taking its place to a considerable extent. It would appear that a material development of the vehicle industry could very profitably be made.

Twenty concerns throughout the State are reported as engaged in manufacturing sash, doors, blinds and general mill work. Ten woods contribute to this industry—pine, long and short leaf, tupelo, cypress, yellow poplar, sweet birch, red oak, white oak, red gum and evergreen magnolia. Four of them aggregate 98 per cent. of all, and three-fourths are long-leaf and short-leaf pine. Window and door frames are important items in this industry, as are stair work, railing, balustrades and posts. Three-fourths of the cypress was imported; about half the yellow poplar and all of the sweet birch, which latter was all made into doors. The other woods were native. Tupelo is second in the list of woods used. This is a wood formerly passed by, but now receiving increasing recognition. It requires care in seasoning, but when properly treated is adapted to a variety of uses, and, growing in abundance in swampy places, its further use is inevitable. This wood more readily resembles poplar than any with which it is likely to be compared. It is sometimes called bay poplar, or bay, a name said to have been first applied to this timber cut on the lower Chesapeake Bay, with the intention of passing it as poplar growing near the bay. It is sometimes called cotton gum. Nearly three-fourths of all the tupelo reported by wood-using industries in Mississippi was made into sash, doors, blinds and general mill work. There are many places in Mississippi where an extensive increase in this line of wood-making industries could profitably be brought about.

The present manufacture of handles for axes, picks, farming implements, etc., indicates the field for further development in this line. The four factories reported used over 4,000,000 feet of timber, 3,604,000 feet being hickory and the remainder white oak, red gum, yellow poplar and white ash, all of native growth.

Four manufacturers of agricultural implements were reported. The development of this line of woodworking industry has hardly begun. General plantation machinery is not at all extensively manufactured in this State, the present activities being directed toward machinery and appliances for growing, ginning and handling the cotton crop. The State supplies all of the wood demanded by the manufactures, nearly three-fourths of which is long-leaf pine. As a very extensive cotton-gin factory is operated at Amite, just over the line in Louisiana, on the Illinois Central Railroad; as farm implements of all kinds are in growing demand all over this section and State, and as raw materials in abundance are at hand everywhere, it is evident that a little capital and efficient management are all required to bring about a very extensive development in the manufacture of all sorts of machinery, implements, etc., used on the farms and plantations.

A table of miscellaneous manufactures given in the article mentioned indicates that some 6,000,000 feet of timber, 2,000,000 of which is ash and 1,000,000 red gum, goes into the manufacture of pumps, patterns, saddles, harness, laundry appliances, paving blocks, mill machinery, woodenware, novelties, boats and ships, cars, coffins, caskets and excelsior. Thirteen establishments are reported under this heading. There are opportunities everywhere for the expansion of these lines. Very often a profitable small industry could be built up alongside an industry now established. For instance, the waste from an ash or factory would be sufficient to run a small hame factory, and singletrees and other articles could be made from the culls of the mills. In time there will inevitably be a very considerable development along all such lines. A man with ability to conduct enterprises of these kinds will have an advantage by early establishing himself now.

Four establishments are reported as engaged in the manufacture of fixtures. These consist of showcases, cabinets, shelving, specially made desks and tables, partitions, counters, bars, railings and similar appliances, and are made for banks, stores, offices, saloons and halls. Owing to the fact that high grade and large pieces are in demand for this work, the wood used was of higher average cost than for any other industry in Mississippi. Long-leaf pine, white oak, yellow poplar, cypress, short-leaf pine, sweet birch, sycamore, red gum and evergreen magnolia were used, in quantity according to the order given, and all but the cypress and sweet birch were native grown. The total amount used was 438,500 feet. An interesting feature in connection with this industry is the use sometimes made of sycamore, which, when quarter-sawed, is darker than if plain sawed, giving a peculiar appearance that is much admired. The abundance of native woods adapted to use in making fixtures indicates a vast field for operation in this line at almost any well located point.

Outside of woodworking, which now presents the most evident, natural and inviting field for industrial activity, there are a variety of mineral deposits and clays which warrant the investigation of the capitalist and developer familiar with those lines. From reports made by Dr. E. N. Lowe, State geologist of Mississippi, it appears that the State contains brown ore, red and yellow ochres, white and other pottery clays, silica and glass sand, sandstone, limestone, lignite marl, chert and quartzite—excellent materials for making roads. There has been very little development and no complete prospecting of any of these minerals. Only recently a group of Memphis men organized a million-dollar company to take over and work the iron

deposits near Potts Camp, on the Marshall-Benton county line. It is reported from those sources that a vein has been traced for many miles; that arrangements for mining have been made, and that the ore will be sold to the Birmingham furnaces until such time as smelters may be erected on the company's property.

Brown iron ore of a very excellent quality, running from 35 to 55 per cent, metallic iron and free from phosphorous, also exists in Montgomery county, but the extent of the ore bed has apparently not been determined. It is stated that this ore would make excellent steel.

Tishomingo county, in Northeastern Mississippi, has a greater variety of minerals than any other section. Here are white pottery clays, red and yellow ochre, tripolite, sandstone adapted to building purposes and also glass making, silica for glass and chert gravel for concrete road making and paving. Practically inexhaustible quantities of chert and chert gravel exist here. All of these minerals are susceptible of a vastly greater development than has yet occurred. The tripolite found near the Tennessee River in Tishomingo county is reported to be so fine that it makes an excellent abrasive and so pure that it makes a fine colorless glass. It outcrops in beds 20 feet thick and is known to cover several square miles.

Quartzite, a very hard quartz rock, occurs in beds in Holmes county and extends eastward in ledges. It is very tough, and has good cementing qualities. There are large deposits near West Station, on the Illinois Central Railroad, lying at the surface. It is easily quarried, and is one of the best materials for macadam roads.

Lignite is found in Holmes county and in several other counties of the State, where it outcrops in beds 4 to 15 feet thick. It is pronounced very pure, an analysis being given as ash, 7.49; volatile matter, 42.38; fixed carbon, 35; water, 15.22. It has good fuel value, making a welding heat in forge. There has been no development of this evidently valuable resource. The same holds true of practically all of the mineral wealth of Mississippi. There is some brick-making, some tile drain manufacture, and the pottery clay has been used hardly beyond the point of demonstration. The field seems to be a promising one for those who are equipped with knowledge and means to open it up.

Agriculturally there are changing conditions all through this section, necessitated by the advent of the boll-weevil. Led by the more enterprising citizens of the communities, attention is being paid to cattle and hogs of the finest breeds. There are several herds of Herefords established, and the silo, unheard of still by many Mississippi farmers, is being put in here and there. Mississippi is a fine grain State from the Tennessee line to within 30 or 40 miles of the coast, where the soil becomes sandy. There are fine pasture lands in abundance, well watered, and any kind of live-stock will thrive. Tick eradication is proceeding steadily, and in the near future the entire State will be freed from this pest. Before the war sheep raising was extensively engaged in. It has not been revived, but it is considered altogether likely that its gradual restoration will occur.

The Northern farmer will find conditions here with which he is not unfamiliar, for he can raise corn and oats and stock to his heart's content, and he can raise more of it. He can raise two crops a year on the same land. He can sow oats in October and cut it in June, getting 50 bushels to the acre. He can then plant corn, making 50 bushels per acre, cutting it in September. Then in October he can plow and put in oats again. This, I am informed, has been done on land in good con-

dition. My informant, himself a very successful planter and stock raiser, said he could take any of the lands hereabouts, build them up for several years and get the results named.

The people here want immigrants, and are organized to extend a helping hand and give a hearty welcome. The Central Land Co. was incorporated last fall by leading citizens of Jackson and vicinity for the purpose of encouraging immigration. The plan is to get a list of lands suitable for farming, stock raising, etc., so as to provide opportunities for people who come looking for properties. Some advertising of this fact has been done, and there is under consideration a proposition to permanently locate a representative in Chicago to more closely get in touch with Northern farmers who may contemplate removal to the South. ALBERT PHENIX.

INDUSTRIES AT HENDERSON.

Expanding Activities in the North Carolina Town.

[Special Cor. Manufacturers Record.]

Henderson, N. C., April 19.

A Chamber of Commerce was organized here last May with J. C. Kittrell secretary, and this body already has secured seven manufacturing plants for the community. It has been active in organizing, getting capital interested and working up preliminary sketches and plans for the proposed Virginia & East Carolina Railroad. It is planned to run this railroad from Wilson to Roxboro via Nashville and Henderson, a distance of about 100 miles, covering a fine stretch of country in this part of the State. From Roxboro to Danville, Va., on one end, and from Wilson to Greensboro, N. C., on the other, is contemplated among the improvements and extensions after the road has been constructed between the four points first mentioned. The company has an authorized capital stock of \$600,000, and Messrs. J. M. Turner of Augusta, Ga., and J. C. Kittrell of this place will be elected May 15 president and secretary of the company, respectively. The board of directors will be composed of local capitalists almost entirely. An engineer and a corps of assistants are now working on the plans and surveying the route proposed.

Mr. D. Y. Cooper is president and active head of the four cotton mills in this place, the Henderson, Harriet Nos. 1 and 2 Cotton Mills and the Croatan Spinning Co. About \$80,000 was spent this year in improvements and increasing the capacity of the Henderson mill, and about half that amount on the Harriet mills. These four mills during the year consume, when running full time, and they did all last year, some 30,000 bales of cotton and turn out in one week between 235,000 and 240,000 pounds of ring-spun hosiery yarn.

Financially Henderson is well off. There are two banks here which have total resources above the million mark. The Citizens' Bank, W. A. Hunt, cashier, is capitalized at \$100,000. The First National Bank is at present capitalized at \$50,000, but the stockholders have subscribed to double the capitalization, and on July 16 next the capital stock will be formally increased to \$100,000. To take care of the increased business this bank is erecting a permanent home. Mr. S. T. Peace, cashier, has plans by Sayre & Baldwin, Anderson, S. C., for this, a four-story brick and stone constructed bank and office building. The total cost is estimated at \$35,000. The Chamber of Commerce begun work a few days ago to organize a building and loan association. It was first proposed to capitalize the association at \$50,000, but the amount was raised so easily in stock that it was decided to get up \$100,000 worth of stock. This also came easily, and the outcome of the cam-

paign was that the capital stock was made a permanent fixture at the \$150,000 mark.

One of the latest manufacturing developments is the plan of the Corbett Automobile Manufacturing Co., of which Mr. W. J. Corbett is president. This firm, which has been experimenting in manufacturing high-grade touring, roadster, run-about and truck cars for over a year, and which has many patrons, will migrate from its present rented quarters to its own commodious plant in the outskirts of the town. One hundred acres have been purchased, and there is now in course of construction four reinforced concrete, stone and brick buildings. The company is capitalized at \$250,000, and in the new quarters it is planned to manufacture annually 300 cars for the Southern trade.

There will be organized in May the Cotton Fiber & Mattress Co., with a paid-up capital of \$25,000 and an authorized one at \$100,000 to erect a plant and manufacture mattresses, etc. Mr. J. D. Cooper will be elected president and Mr. E. B. Taylor general manager. Work has just begun by Mr. Robert Bunn, a local contractor, toward the completion of the plant by July 15. The plant system will consist of four one-story brick-constructed buildings, to cost, with machinery, which has been purchased, \$18,000.

Henderson is noted as a buggy manufacturing center. The Corbett, Capital and Carolina buggy companies are the leading manufacturers of this product, and the Henderson Manufacturing Co. swells the list with the manufacture of buggy bodies. In this connection it is stated that one of the planned activities of the Chamber of Commerce is to perfect the organization, which has passed the contemplative form, that will establish a plant and manufacture a line of farm wagons. The plan is at present to erect a plant and install sufficient machinery to turn out 5000 of these products per year.

The Carolina Land & Lumber Co. is a recent addition to the Vance county manufacturing list. This firm makes of roofers under contract for Northern shipments. D. O. Sunderland Company, Inc., established its plant here the early part of the year. This firm has purchased the right to cut the standing timber off of some 3000 to 4000 acres of land hereabouts, and has established several sawmills throughout this section at points of advantage. The lumber, after going through the saw mills, is brought here, where it is made into drawing window frames, flooring, ceiling and other products for Northern shipments, as well as to supply a local demand. It is planned to erect additional buildings and begin the manufacture of sashes, doors and blinds. The J. P. Taylor Company is a buyer and manufacturer of a large annual tonnage of tobacco for shipments to foreign ports. F. E. Shroder heads the North Carolina Cotton Oil Co., which manufactures both cotton oil and fertilizers. The Henderson Gas Co. is establishing its plant through the efforts of the local representative, A. M. Worstall of Philadelphia. Other industries are the Vance Guano Co., the Carolina Bagging & Tie Co. and the Henderson Ice & Cold Storage Co.

As a center of the tobacco belt Henderson is a natural tobacco market. Over 6,000,000 pounds of tobacco were sold in the local warehouses last year, totaling over \$1,000,000 in value for the season. When the \$200,000 is realized as the result of a bond issue for next year and is spent in the construction of 200 miles of sand-clay road, it is expected that the farmers will bring double their present offerings to the tobacco warehouse buyers.

An appropriation of \$15,000 has been ordered by the town council to do some immediate work on the paving of the streets

in the town. Gilbert C. White of Durham has been employed as engineer, and in a small way the work will be begun at once.

The Home Telephone & Telegraph Co., of which J. P. Taylor is president and P. C. Toepelman is general manager, covers almost the entire East North Carolina and a small part of Southern Virginia. It has 1200 miles of toll lines and 5500 subscribers at 26 exchanges. It was established in 1895, and is capitalized at \$500,000.

Roy G. Booker.

Building at Sumter.

[Special Cor. Manufacturers Record.]

Sumter, S. C., April 11.

Sumter is just entering upon an era of building which will no doubt lay a more firm foundation for the material upbuilding of the city. According to Mr. J. V. Snell, secretary of the Chamber of Commerce, two new hotels, an addition to one of the largest industrial plants in the city and an office building are among the good things that are to come soon.

Work has begun on the reinforced concrete office and bank building to be erected by the City National Bank, which will be seven stories high. It will have a base dimension of 35x65 feet, and will cost \$60,000. W. L. Harbin of Lexington, N. C., is the general contractor, and Wheeler & Stern of Charlotte, N. C., are the architects. Directly across the street from the City National Bank building site several workmen are busy tearing away an old wooden structure preparatory to the erection of a two-story brick bank and office building for the Bank of Sumter. This will have a base of 32x150 feet, and will cost \$25,000. Wheeler & Stern of Charlotte are the supervising architects.

The Claremont Hotel Co. of Richmond, Va., has awarded contract to the Wise Granite Co. of Richmond to erect a hotel that will cost \$100,000. Half of this amount was raised by the citizens of Sumter and the remainder was furnished by the Virginia capitalists. The hotel will be four stories; base 85x125 feet; brick construction; have 77 rooms; a private telephone exchange; steam heat, and in fact all the conveniences of an up-to-date hostelry. The plans have been prepared by Chas. M. Robinson of Richmond, Va.

Andrew L. Jackson has made arrangements with Wheeler & Stern of Charlotte to erect a hotel, which will be three stories; brick construction; ground floor dimension 80x120 feet; will contain 70 rooms, and be heated by steam.

The Sumter Telephone Manufacturing Co. manufactures an ignition magneto which has recently been patented by one of its engineers. To take care of the increased business created by this appliance a new factory was erected. This plant is 50x250 feet, and with all of special and new machinery installed will represent an outlay of \$30,000. The building contains 1300 square feet of floor space. The ignition magneto is patented to take the place of the batteries on the stationary gas engines.

A \$40,000 Y. M. C. A. building has just been opened; a gas plant is to be one of the early realities of the city, and with the residential property selling rapidly preparatory for early construction work in this line, the building era is on with a vim.

Roy G. Booker.

The Board of Trade of Little Rock announces that the Gulf Compress Co. has established a demonstration farm of 25 acres at its cotton compress in Little Rock. President Hanson of the company announces that similar farms will also be established in connection with the presses at Dyersburg, Covington and Brownsville, Tenn.; Clarksdale, Tupelo and Corinth, Miss., and at Decatur, Ala.

The Newport News Shipyard

By WALDON FAWCETT.

The launching at Newport News, Va., on May 18 of the United States Steamship Texas, the newest and largest battleship in the United States Navy, will serve to focus attention upon the not less remarkable industrial plant of which this record-breaking craft is a product. It is appropriate that a warship named for a Southern State should be constructed in a Southern shipyard, but it is perhaps even more appropriate that the largest and finest fighting ship in America, if not in the world, should be the output of the largest and most perfectly appointed shipyard in the Western Hemisphere, if not in the world. This latter is a distinction which has been enjoyed for some years past by the plant of the Newport News Shipbuilding & Drydock Co., and it is not likely to

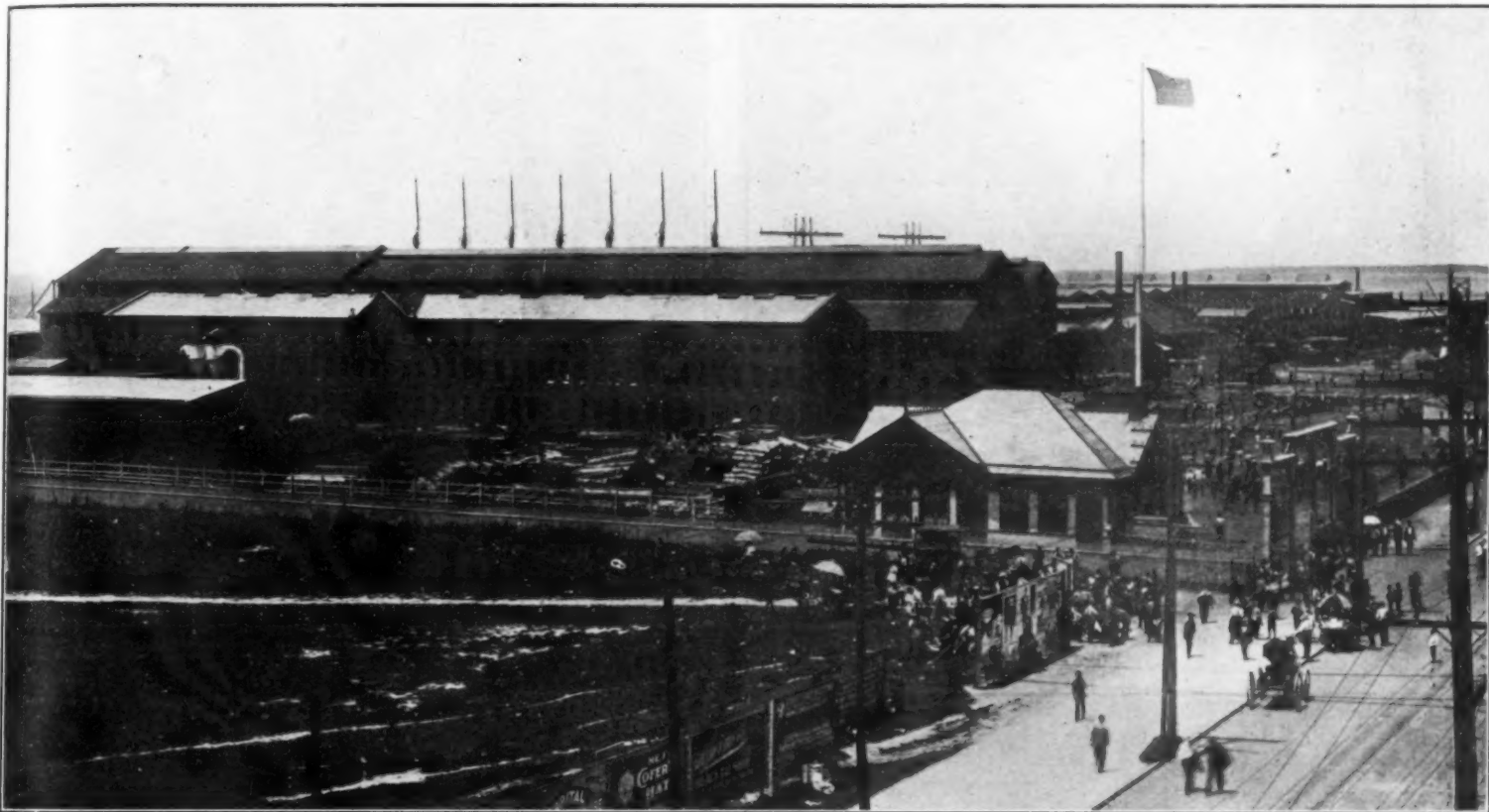
two and one-half feet) that allows a ship to enter the drydocks at any hour of the day.

However, the distinctive feature of the Newport News yard is its unrivaled system for attaining convenience, speed and economy in the conduct of all the operations of building a ship. For all its perfection the fundamental plan is simplicity itself. It merely prescribes that all the work on a vessel from its inception to its completion shall be absolutely progressive. In other words, it contemplates a continuous, unretarded movement forward of all material from the time it enters the yard in the raw state until it is ready to leave as a part of the completed ship. There is no retracing of steps, if it may be so expressed, and a minimum of lost motion.

compressed air—are employed, and a battery of eight marine type Scotch boilers, working at a pressure of 120 pounds, are required to supply steam for the engines which generate electricity and compress air. The electric plant gives an output of about 2270 kilowatts, the current being distributed through one main switchboard 40 feet in length, and a feature of the electrical assets of the yard is the very complete installation of arc and incandescent lamps which is provided for the illumination of all parts of the shops, wharves and drydocks, and which enables work to be carried on by night as well as by day. There is a hydraulic plant of ample capacity for all the hydraulic tools used, and in order to supply power for the pneumatic riveters, chippers, boring machines and other tools of this class, which have been introduced on an extensive scale at Newport News, there has been provided three air compressors capable of compressing

The second floor of the ship shed is used as a mold loft, where some of the most important preliminaries of ship construction are carried on, and adjacent to this building is the bending shed, in which are located the furnaces where bars of iron, sometimes 70 feet in length, are heated and then bent into the various shapes used in ship construction. Even in what might be denominated the minor divisions of the plant there may be observed that same perfection of equipment which is a feature of the entire yard. For instance, in the grinding-room there are upward of a dozen emery wheels ranging in size from 9 to 36 inches.

The machinery department, the second of the two main departments of the yard, concerns itself with the construction of the engines, boilers and all other machinery which have place in the modern warship or merchant vessel. The machine shop, blacksmith shop, boiler shop, etc.,



GENERAL VIEW OF NEWPORT NEWS SHIPBUILDING PLANT.

be lost, because, thanks to a progressive policy, the equipment of the plant is kept up to date by frequent additions of machines and tools representative of the latest approved practice, and not a few of which are designed especially for use at this plant.

The shipyard at Newport News covers an area of more than 120 acres, and represents an investment of more than \$15,000,000. Founded by the late Collis P. Huntington, it became the pet project of the pioneer transcontinental railroad builder of America, and since his death has received the especial attention of his heirs. The location in Tidewater Virginia was chosen because a mild and equable climate makes outdoor work possible throughout a greater portion of the year—a boon that has been especially appreciated during the past six months—and from the further circumstance that it is within easy reach of important sources of raw material and the coal fields of Virginia and West Virginia. The shipyard has a water frontage of a mile, and derives still further advantage from the fact that it is situated on historic Hampton Roads, one of the finest natural harbors in the world, and enjoys a depth of water and a small range of tide (only

In pursuance of this policy the buildings of the shipyard—brick structures that cover an aggregate of more than 15 acres—have been so grouped as to promote the advancement of work.

Another means to this same end is found in the network of railroad tracks which connect all the various buildings, and which, with the use of special locomotives, enable the expeditious transfer of material from shop to shop. A spur track connects the web of tracks within the yard with the main line of the Chesapeake & Ohio Railroad, so that carloads of steel plates, angle iron and castings as they arrive daily may be shifted to any portion of the yard where the exigencies of the case may require them to be unloaded. Material arriving by water is handled in a similarly economical manner, and steam and electric cranes placed at strategic points in all the shops enable any casting to be lifted from the railroad car and set down directly beside the tool which is to machine it.

The most advanced modern ideas are exemplified in the application of energy to the work in hand at the Newport News plant. All three of the standard power-generating forces—steam, electricity and

9000 feet of free air per minute to a pressure of about 100 pounds per square inch.

At the Newport News yard, as in all plants of this kind, there are two main departments—the hull department and the machinery department—but in few other yards have the operations of these respective divisions been so centralized and concentrated without any sacrifice of the facility for transferring material from one main department to the other with no loss of time. The work of building a ship begins in the ship and framing sheds and other units in the hull department, and these buildings have been grouped around the shipways where the vessels under construction are laid down. The equipment of these shops is notable in its way. In the framing shed there is a hydraulic man-hole punching machine, which is the largest in the world, and with a pressure of 1500 pounds punches a hole 18x27 inches in size in plates nearly an inch thick. In the ship shed there are 32-foot bending rolls, driven by a 50-horse-power engine and regulated by hydraulic power, which rank as the largest in the world, and there is a 32-foot planer, guillotine shears, shear-blade grinders, cold saws, counter-sinking machines and all the other essentials.

form a community of interest just as has already been explained is the case with the integral parts of the hull department. The machine shop—probably the largest, costliest and best appointed in America—is easily the pride of this department, if not of the entire works. It is a three-story brick building 100x525 feet in length, and in this structure all the casting and forgings, such as bedplates, shafts, cylinders, condensers, piston rods and other parts required for engines are machined, the parts fitted and the engines erected. In the galleries are the brass-working machines, and all the material is handled by electric traveling cranes (in capacities up to 50 tons), that travel the entire length of the building.

As may be surmised, the equipment of the machine shop is notable. There are planers 36, 60, 84 and 120 inches in length, and there is a wall planer measuring 22 feet plane by 22 feet slot that is the largest in the world. This machine, which is a combined planer and slotter, is operated by an electric motor of 50 horse-power. There is a 125-inch shafting lathe, which will take 34 feet between the centers and has a swing of 125 inches, and there is a 63-inch lathe, as well as other lathes, ver-

tical boring mills, drill presses, slotters, shapers, etc. In the blacksmith shop there are more than a dozen steam hammers, ranging from 600 to 6000 pounds, and one of the heaviest cutting shears ever made, the maximum dimension of cut being about four inches. Forced draft is employed for the forge fires for all heavy forging in the blacksmith shop. The equipment of the copper and boiler shops and other units in

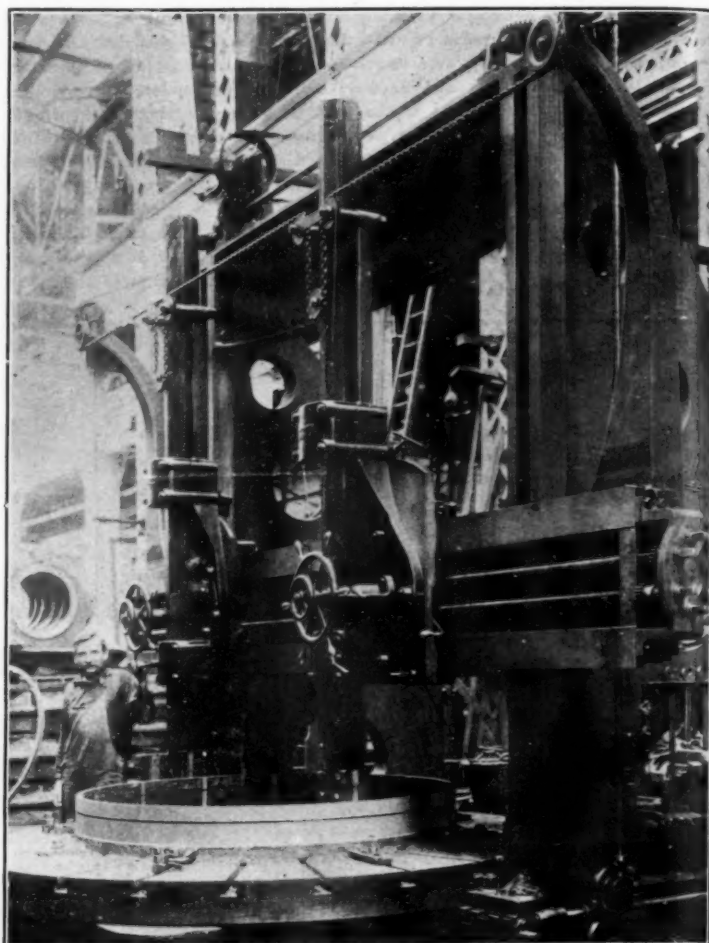
that will hold as much as 500,000 feet of lumber, and in the entire yard, occupying a space of 500x900 feet, there is usually in storage upward of 5,000,000 feet of lumber. This stock embraces some three dozen varieties, and inasmuch as a considerable portion of this lumber ranges in value from \$100 to \$500 per 1000 feet, it may be appreciated that the lumber stock alone represents a considerable investment.

pany operates two large foundries—one for steel and iron castings and the other for brass work—which are linked to the main plant by means of a railroad. In these foundries most of the castings for the ships under construction are made, and the larger of these two foundries includes a small steel plant which turns out the smaller steel castings used. These facilities are of tremendous advantage in facili-

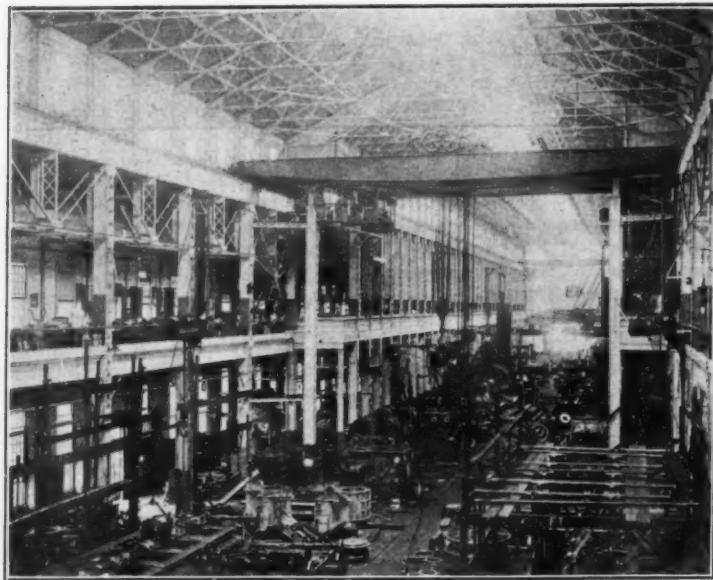
probably the finest complement of these mechanical burden bearers to be found in any single industrial institution in the world. Incidental mention has already been made of the traveling and locomotive cranes and other similar apparatus distributed in the various shops for loading and unloading cars, handling the material in working, etc., and these are supplemented in function by the traveling cranes,



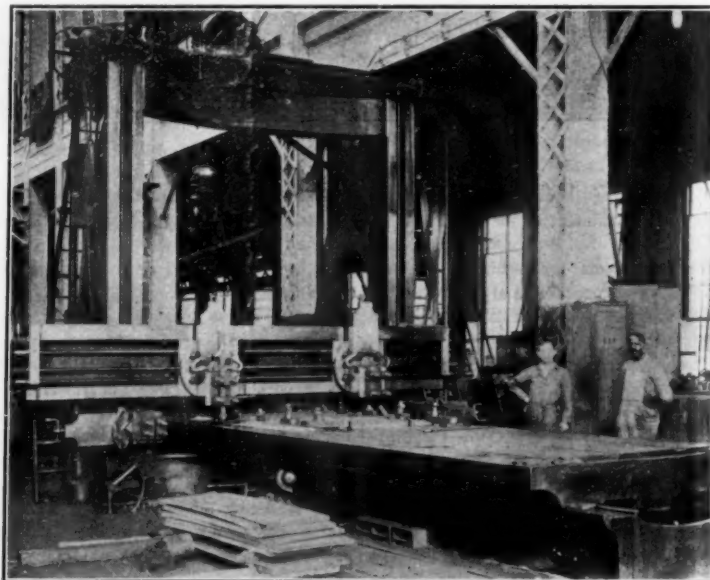
THE 150-TON REVOLVING DERRICK OF THE NEWPORT NEWS SHIPBUILDING PLANT.



ONE OF THE LARGEST MACHINE TOOLS OF THE NEWPORT NEWS SHIPBUILDING PLANT.



VIEW OF MACHINE SHOP, NEWPORT NEWS SHIPBUILDING PLANT.



BIG PLANER IN SHOP OF NEWPORT NEWS SHIPBUILDING PLANT.

this group measures up, in quality and quantity, to those already cited.

Yet another center of activity in this versatile industrial stronghold is formed by the grouping of the joiner and pattern shops, the lumber sheds, the fireproofing plant and the sawmill. There would seem to be little question but that the lumber department of the shipyard at Newport News is the most complete in the world. The storage facilities include single sheds

A seven-ton locomotive crane is used in handling the lumber. Adjoining the lumber yard is the fireproofing plant, comprising five kilns. This is an important adjunct, for all the wood entering into the construction of the modern battleship must be fireproofed.

Just here it may be noted that in addition to the units of the main plant which has been described, and in which some 6000 men are employed, the Newport News com-

tating the repair work which the Newport News plant handles in large volume, sometimes reaching a total of more than 500 vessels a year.

As might be surmised from the attention bestowed at the Newport News plant upon the handling of material with a view to avoiding duplication of operations and lost energy in any form, the management of this plant has all along specialized in the matter of cranes and derricks, and has

which bring material to the shops from the lumber yard and the steel storage yard, where the metal has been racked to prevent rust.

The Newport News company was one of the first in the world to utilize cantilever cranes in shipbuilding, and there are now in use at the plant five of the big balanced cantilevers, all but one of which are electrically operated. Each of these cantilever cranes is located on a tramway 100 feet

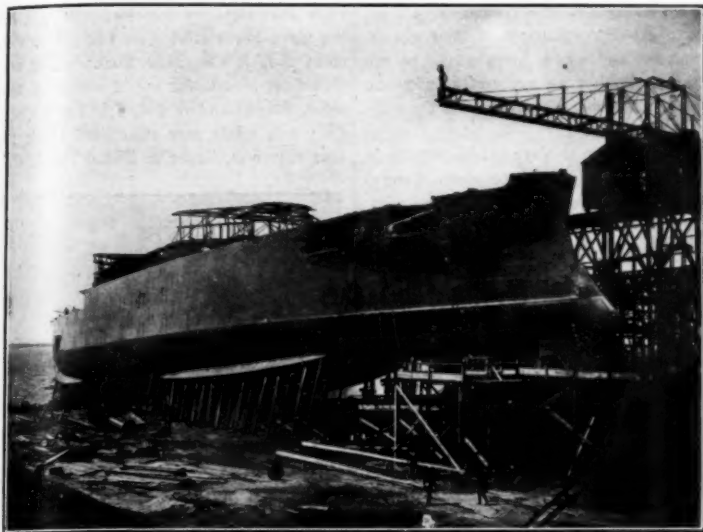
in height placed between two shipways or building berths, and thus, with its long arms reaching out on either side, such a crane is enabled to do dual service, handling material for two ships simultaneously (one on either side of the trestle), and not only carrying the length of the shipway the plates, angles, etc., that are to be worked into each vessel, but lifting them in mid-air to the very point in the hull

where the respective parts are needed. Each of these cranes has a tramway 187 feet in length, and the working loads range from 4½ tons 89 feet from the center to 14 tons 55 feet from the center.

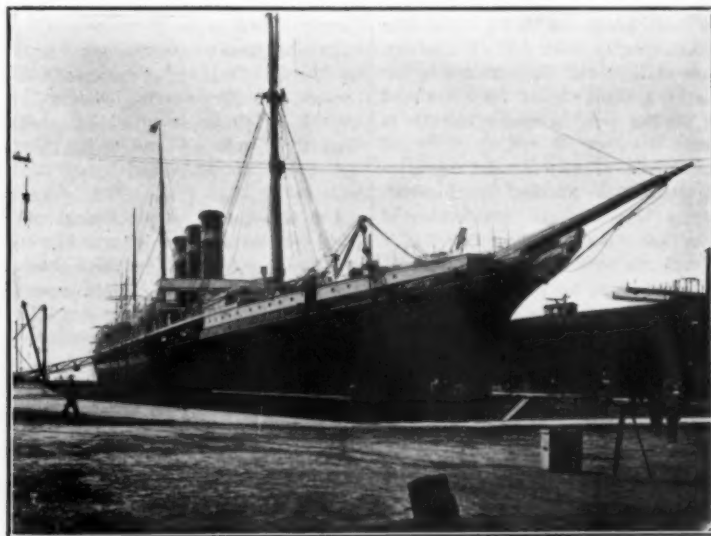
The equipment of the yard includes two further auxiliaries that are even more spectacular in their operations than the burden bearers above mentioned. One of these is the 150-ton electrically-operated revolving

derrick Hercules, and the other is the shear legs of 100 tons capacity. The Hercules, which is used for handling armor-plate, heavy ordnance and boilers, is the largest derrick crane in the world, and was designed and built at the Newport News plant. The derrick jib may have its outer end raised or lowered at the will of the operator, so that the hoisting blocks have a movement in and out from pedestal of

the crane, as well as rotation in a circle with a circumference of 207 feet. The big derrick is revolved by duplicate sets of machinery, and the hoisting blocks may be elevated to a height of 118 feet, so that it will be appreciated that this giant has in its fetching and carrying a considerable latitude of operation for so ponderous a piece of equipment.



BATTLESHIP UNDER CONSTRUCTION.



AN AMERICAN LINER IN DRY-DOCK.

Washington, the American Mecca.

By S. J. MACFARREN.

The country's visitors to the Capital City have scarcely had time to master the new topography of the region north of the Capitol between the old Baltimore & Ohio depot and the new Union Station when, at the point of the magic wand of the Park Commission, the scenes shift again and the Capitol Plaza, or National Court of Honor, attracts the notice of the curious. The Government's condemnation proceedings are already well advanced among the city blocks which are to be wiped off the map forever by this notable improvement, and much grading or filling and landscape work has been done in this area. This fine plaza will be overlooked by the great statue of Columbus, now being erected just opposite the main entrance to the Union Station.

The new square occupies practically all the ground between the Union Station and the new office building of the Senate and between north and south lines through the old Baltimore & Ohio depot and the Library. The far-reaching plans for a city beautiful were initiated by President Washington and worked out under his trained eye by his French engineer, L'Enfant. It remained for the present Park Commission, initiated by the late Senator McMillan of Michigan, when chairman of the Senate committee on the District of Columbia, in 1901-1902, to really resurrect, or rather recreate the Mall, which Washington planned even more in detail than the city itself. The Mall seems to have been a pet of his, and his eye of a surveyor would beam with pride and pleasure could he inspect the wonderful 10 years' work of this commission, which, through much factious opposition, in and out of Congress, nevertheless has set its indelible mark on Washington's artistic development and beauty forever. It was and is headed by D. H. Burnham, the Chicago architect, and its original membership included Frederick Law Olmstead, nominated by the American Institute of Architects; McKim of

New York and St. Gaudens, the last two having since died, leaving only Burnham and Olmstead to be congratulated on their wonderful work of a decade.

Keeping close to Washington's plans in their modern interpretation, these unselfish and generous volunteers, each a leader in his specialty, have so completely met and vanquished the ceaseless obstruction that it is safe to say that all the \$40,000,000 or \$50,000,000 expended on the stretch of say three miles through the heart of Washington and including the Mall and Rock Creek Valley to the fine bridge at 16th street, has been spent as directed by them.

And the list is a long one, including, as it does, the Union Station itself, the Senate and House office buildings, the new National Museum, the new District of Columbia building, looking out on Pennsylvania avenue and the city beautiful, the incomplete additions to the home of the Department of Agriculture, the unique and artistic home of the Pan-American Union, the ownership of which is shared by no less than 21 American republics—a circumstance without parallel in history—the new Continental Hall of the Daughters of the American Revolution, the last two being largely the result of private initiative; the Grant memorial group, now going up, after prolonged and bitter dispute as to location, in future Union Square, west of the Capitol and south of the Peace Monument on Pennsylvania avenue; the \$2,000,000 Lincoln memorial, at the opposite or western end of the Mall, west of the Washington monument and south of the White House; the \$8,000,000 group of buildings for the State and Commerce and Labor departments, for which competitive plans have been accepted and then harmonized into a group by the successful architects, and land condemned between the New Willard Hotel and the Mall, south of the avenue and near the new District of Columbia building; the new home for the Bureau of En-

graving and Printing, across the Mall from the last; the Connecticut avenue, Q street, 16th street and now Calvert street bridges over Rock Creek Canyon—not to mention the Zoo, in the same neighborhood, or Potomac Park, and the fine speedway, or the Basin, Army War College building, etc.

Those to whom this appears a tall order for 10 years' work may have forgotten how little was done in the previous 10 years, so that the average is not excessive. Those who think that the matter of \$40,000,000 to \$50,000,000 involved is an extravagant amount are equally mistaken, not only because part of the expenditure has been met by the railroads—as the Union Station, part by private enterprise; as the Continental Hall, built by the ladies of the Daughters of the American Revolution or private beneficence; as the Carnegie subscription to the Pan-American building, part by the District of Columbia; as the Basin, parks, bridges, etc.—not only so, but because this is a great and growing country, with a great and growing home and foreign business, requiring extensive plants for its transaction, so that the National Government is even now paying \$500,000 annual rent for necessary office room. This last fact alone makes such large expenditures the most conservative of investments and removes these items far from the field of speculation or extravagance. Indeed, the comprehensive plans of the Commission call for the ultimate occupation by the National Government of all the land between the Avenue and the Mall and between the Capitol and the White House, and every year's delay in its acquisition will cost the country millions of dollars, though all large building operations have already been halted there by the announcement of these far-reaching plans, which has already driven the banking and business center far to the west and north.

This movement revives Washington's original plans for the National Capital while there is yet time. Another decade lost would have made it too late forever. And not only is the Government a tenant of Washington real estate operators for the enormous annual rental mentioned, but this princely payment secures inadequate quarters for vitally important and growing bureaus. Nor are conditions any bet-

ter in some of the Government's own buildings, as say the Patent Office, where the history of a century's invention and industry and the titles to more than half the national wealth are similarly exposed. No private business of a title of their importance would be so housed or neglected, unless bankruptcy was the intention. A Hall of Archives is one of the national necessities still lacking—a lack which is a national disgrace.

But to continue our stroll on the Mall. Here are the homes of the Smithsonian Institution, the Fisheries Commission and the Botanical Garden as well. Senator Root has introduced a bill for the cession of a site near to if not identical with the old Pennsylvania Railroad depot to a private enterprise which proposes to erect a \$2,000,000 hall for convention uses and the like, something long needed in Washington, and which is intended as a second memorial to Lincoln, whose name it will bear. It will be placed and built in accordance with the general plans mentioned. A fitting statue of the Father of the Navy, John Paul Jones, has just been unveiled near the Tidal Basin, on the southern side of Potomac Park. The commission was composed of Secretary of War Stimson, Secretary of Navy Meyer, Senator Wetmore and Colonel Cosby, representing the Army.

Last, but by no means least, on our list comes the new postoffice, now under way and occupying the entire block next west of the Union Station, an ideal location, since it is only separated from the Government Printing Office by the next street west, so that short tunnels may connect it with both. Across the Plaza, three or four blocks distant, is the Senate office building, which is already connected with the Capitol, and through it with the House office building on the south by ample tunnels. Within this one-fourth of a mile radius originates the great bulk of the enormous tonnage of public documents, which flows out over the country in a swollen stream, the demand for some single notable speech running into the million copies, weighing several tons. With the tunnel connections now in use and the short additional lines sketched and perhaps one more to the site of the present post-office on Pennsylvania avenue, which may

serve for a home for the Postoffice Department and a city office—with such a tunnel system in use scores of vehicles and hundreds of horses and their noxious street droppings and the resulting colonies of disease-peddling flies may be finally dispensed with, while service efficiency is multiplied many times. But the present underground electric cars will ultimately be superseded by a single mailing bureau, say in the Printing Office, or in the Post-office itself, which may do all the mailing, of documents at least for all Senators, Representatives and Departments or bureaus by a single skilled force equipped with the last word in mechanical aids to mailing.

And in view of the wonderful expansion and growth of the National postal service, prudence suggests some anticipation of the inevitable needs of the future. It is said that this office will be made a model, in these respects, for the country, if not for the world. Architecturally the building will be a prominent feature of the new Plaza, second only to the Union Station itself—after the Capitol. In this sense it will harmonize with both the others, as well as with the beautiful Library of Congress and the Senate office building across the square, and it will add yet other stones to the monument, "more enduring than brass," which the Park Commission has been building for itself for 10 years.

In short, it will be fully worthy, in place and form, in structure and quality—to say nothing of its unique efficiency—it will in all ways be worthy of its company in the city beautiful, which is flowering from the dreams of the father of surveyors whose is the credit for its present plan.

Even the present development of the plans so hastily outlined here makes this a new Washington indeed to the casual visitor, and the building work of private enterprise, under wise regulation, is fully abreast of that described as the accomplishment of Governmental agencies. While time would indeed fail us for even a bare list of the hundreds of parked areas, big and little, adorned as they are by their setting of hundreds of thousands of fine trees.

Washington, the Mecca, is not to be told in cold print; it is to be seen with appreciative, patriotic eyes, which may judge the future by the present beauty. Each year the once despised Potomac swamp site is growing into the city beautiful, worthy home of a great Government and capital of a great nation. And each year is adding to its population from the best of American citizenship attracted by these and similar promises of its assured future, as one of the finest cities of the world. And each year the swelling tide of tourists from "the States" feels more and enjoys more the welcome of their common, their own city.

The Peoria editor who wrote to his paper that the Union Station was so big that the climate at one end of it differed widely from that at the other end expressed the feeling of many newly arrived travelers while they walk down the long sheds and cross the immense concourse, only to find acres of waiting-rooms still between them and the street, which they must reach before taking car, carriage or taxicab for the city destination. The expanse of tiled floor, tinted wall and arched ceiling, to say nothing of window and door spaces, does not lessen the idea of vastness, even in a single one of many rooms and stories, some of which most passers never see.

The electric baggage trucks are well chosen for that work, as human muscle is inadequate for the mileage.

But the patriot's pilgrimage should not

overlook 16th street "of the President's," as sometimes called. Going up this fine avenue, past the modest home of the Geographical Society, scarcely fit to hold one in fifty of its membership, which is said to be 100,000, and the handsome quarters of the Carnegie Institution, the new Masonic Temple, at S street, occupying an acre lot, is now well under way and promises to be a worthy exemplar of Solomon's Temple, with architecture walls, etc., "of a massiveness," as the Frenchman puts it, suggesting treasure storehouses for the wealth of Cathay, and exceeding, in this respect, any Government buildings yet noticed. With its beautiful but simple lines it will make a fit and lasting tribute to the taste, enterprise and wealth of its builders.

The question of manufacturing industries for Washington is intermittently mooted in commercial and civic bodies. The progressive element, mainly imported from other communities, at present led by a Virginia banker, argues with some force that greater variety of occupation is necessary for the highest prosperity. An electric vehicle factory from Pittsburgh, Pa., and a shoe factory from Lynchburg, Va., have recently located, and seem to be doing well, likewise a Pittsburgh steel works devoted to projectiles for the navy, coast defense, etc. But Washington's future in these directions is not very bright, though the new element in Congress have commenced to agitate for the hydro-electric improvement of the Great Falls of the Potomac. Here, within half a score of miles, has wasted for centuries 25,000 or 30,000 horse-power—sufficient for the domestic and industrial needs of a city of 1,000,000 population.

Across the Potomac and back of Fort Myer are being erected the great towers for wireless telegraph work, with a capacity of 3000 miles or more.

To the north a few miles lies College Park, the aviation field, in plain view of passing trains, where the lately increased aeroplane military force of the Government will shortly drill daily and afford visitors excellent opportunities for familiarizing themselves with this future toy of the millionaires.

The automobile is making good all over the world (our Government being far in the rear of European powers in this respect), and quite apart from its undoubted military importance it has a future due it which will rival, on different lines, that of the automobile.

Figures of cost of the developments at Washington have only been mentioned in the aggregate, which must be meaningless to many readers. Detailed costs are omitted for several reasons; because, as first put out, they are usually exaggerated or distorted; because they convey little or nothing of meaning in the sense intended here; because the greater meaning of this account does not lie in money values, is not material, nor merely useful, but more, far more, than any or all of these.

The real meaning here intended is a living sketch of this already imposing nucleus of the Capital beautiful for a nation of 100,000,000 of aggressive and progressive freemen, holding up more and more steadily each year of this wonderful century of world history the light of freedom and progress for the human race.

A capital city which is to be on the lines shown in the plans of the commission mentioned, and which are rooted more than a century into the history of the country and its founders and its father yet fit the present time like a glove the hand it warms.

A city which is not sectional or local to any part or State, but which is the common possession and the common pride of all its citizens, from Alaska to Porto

Rico or the Philippines, from Nantucket to Honolulu.

A city fast becoming fit for the clustering of all the vines of national and patriotic sentiment and which is at once a fitting home for the Army, the Navy, Congress and all the scores of departments and bureaus which are the agents of the people and do their common work.

A city which more and more attracts the cultured, the studious, the literary or inventive elements of national greatness, with a growing company of their chosen associates, and which promises to be not only a civic, but an art and a scientific model for the host of such centers throughout the country.

In short, the real National Metropolis in every sense but those of commerce, finance and manufactures—a representative city, such as traveled foreigners inquire for, but do not find in America, as the ones they left to come here.

It will pay every patriotic citizen to come and look at it in this light.

The Navigation Congress.

Editor Manufacturers Record:

Referring again to the coming Twelfth Congress of the Permanent International Association of Navigation Congresses, to be held in Philadelphia in May, an inspection of the questions and communications to be considered at that meeting and of the list of eminent engineers who will take part in the proceedings will serve to show the importance and value of this organization, especially to the South, inasmuch as perhaps the larger part of the facilities of the United States for water transportation are in that section, either developed in a measure or remaining to be developed. The questions and communications are as follows:

Improvement of rivers by regulation and dredging, and, if needs be, by reservoirs. Determination of the case in which it is preferable to resort to such works rather than to canalization or the construction of a lateral canal.

Dimensions to be assigned in any given country to canals of heavy traffic. Principles of operating. Dimensions of locks.

Intermediate and terminal ports. Best method for combining, facilitating and harmonizing the transfer of freight between the water-way and the railway.

Means for docking and repairing vessels.

Dimensions to be given to maritime canals. Technical point of view. Probable dimensions of the sea-going vessels of the future.

Mechanical equipment of ports. High-powered dredges and means for removing rock under water.

Report on the most recent works constructed at the more important seaports, and especially on those relating to breakwaters. Applications of reinforced concrete; means for insuring its preservation.

Bridges and ferry bridges; tunnels under waterways used for ocean navigation. Economic and technical study.

Safety of navigation. Lighted buoys.

These matters are discussed, and plans and drawings shown, by the official engineers of Sweden, Russia, Netherlands, Italy, Great Britain, France, United States, Germany, Tunis, Denmark, Algeria, Hungary, Spain, Belgium, Austria and other engineers eminent in the profession.

BENJ. THOMPSON.

Tampa, Fla.

Modern Bank and Office Building.

In conformity to a general demand, nowhere more prevalent than in the South, and to meet the exigencies of progressive policies, financial institutions find it necessary to provide structures and equip-

ment of the most modern design. A building of this character is the \$250,000 bank and office structure being erected by the Commercial National Bank of Charlotte. It is 12 stories high, 35x150 feet, constructed of marble and terra-cotta after plans by Mowbray & Uffinger, the contractor being the Whitney-Steen Company, both of New York. The building is nearing completion, and is illustrated herewith. Construction and materials were furnished as follows: Marble for the three lower stories on two sides, Vermont Marble Co., New York; white mat glazed terra-cotta for upper stories on two sides, South Amboy (N. J.) Terra-Cotta Co.; dull white mat enamelled brick for rear exteriors, Sayer & Fisher Brick Co.,



Sayersville, N. J.; modulating steam heat, designed by Dexter Engineering Co. of Providence, installed by American Machine & Manufacturing Co. of Charlotte; 5000 barrels of cement, Norfolk (Va.) Portland Cement Co.; rough and hollow brick, Charlotte Brick Co., Charlotte; sand brick, Bonsall & Co., Hamlet, N. C.; foundations sunk 60 feet, reaching solid rock; crushed rock for open caissons, Charlotte Quarry Co., Charlotte; floor arches, National Fireproofing Co., Washington, D. C.; terra-cotta partitions, Birmingham Fire Brick & Proofing Co., North Birmingham; three electric elevators (one convertible into freight elevator), Warsaw Elevator Co., Baltimore.

Other companies supplying materials were: J. H. Wearn & Co., J. N. McCausland & Co., Taffals & Marcus, Toomey Plumbing & Heating Co., Mecklenburg Iron Works and Charlotte Builders' Supply Co., all of Charlotte; United States Metal Products Co., Joseph Elias & Co., American Bridge Co., Nelson & Co., Electric Construction Co., McCrum-Howell Company and Shipley Construction & Supply Co., all of New York; McClamrock Marble & Tile Co., Greensboro, N. C.; York (Pa.) Manufacturing Co.; American Radiator Co., Chicago; Hyde, Murphy & Co., Ridgway, Pa.; Sydnor Pump & Well Drilling Co., Richmond, Va.; Cutler Mail Chute Co., Rochester, N. Y.; Mosler Safe Co., Hamilton, O.; Norfolk (Va.) Iron and Wire Works.

The Texas Cottonseed Crushers' Association will have its eighteenth annual meeting at Houston July 22-24. The officers of the association are W. A. Sherman, Houston, president; Claude Wylie, Tyler, vice-president; J. A. Underwood, Honey Grove, treasurer, and Robert Gibson, Dallas, secretary.

WIDE-AWAKE SUFFOLK.

Its Point of Vantage for Industry and Trade.

[Special Cor. Manufacturers Record.]

Suffolk, Va., April 27.

This wide-awake Virginia city, lying on the Nansemond River, some 20 miles from Norfolk, and in the midst of the rich section known as Tidewater Virginia, enjoys unusual distinction in at least four lines having special bearing upon commercial and industrial development.

As the crossing point of six important lines of railroad, radiating in all directions; as the location of 70 plants, running the gamut of manufacturing from rough lumber to hosiery; as the point of assembly annually of millions of bushels of peanuts, of the value of \$6,000,000; as the home of a bank that is unique among institutions of its kind in the country, having a capital of \$20,000, a surplus of \$800,000 and deposits of more than two millions.

These things are sufficient in themselves to fix the character of a city of 12,000 people—that being the population claimed for Suffolk and its immediate suburbs—but they by no means complete the tale here, for they are backed up by others of such cumulative force that justice demands their relation.

The railroads meeting and crossing here are the Norfolk Southern, the Virginian, the Seaboard Air Line, the Atlantic Coast Line, the Southern and the Norfolk & Western, and these, with their connections, give Suffolk the advantage of a trackage of more than 40,000 miles leading to all points in this country, while their terminals at the port of Norfolk put it in touch with all the other ports of the world into which or from which commerce-laden vessels sail. In addition to these transportation facilities there is a line of boats and barges plying between this city and Norfolk, supplementing them and rounding them out to a symmetrical fullness.

These railroads reach into the iron-ore fields of Virginia, the coal regions of the two Virginias, the forests of this State and North Carolina and the cotton fields that lie round about, and over them can be cheaply assembled here the raw materials necessary for a very large industrial development. Coal can be delivered here on a basis that insures plenty of power at low prices. The pine and poplar and gum and cypress and oak and juniper that stand close to hand render mills and wood-working plants here very profitable. The nearness of the cotton lands and the cheapness of power make it the natural home of the spindle and the loom.

The industrial establishments now doing business here, and finding profit in it, are engaged in manufacturing lumber and the various things made therefrom, such as barrels, boxes, crates, hampers and baskets of the kind used in shipping fruits and vegetables; flooring, inside finishings, shingles, lath, drugs, fertilizers, agricultural lime, buggies, surries, farm wagons, log wagons, carts, peanut pickers, brick, tile, ice, meal, cigars, marble, machinery, vinegar, carbonated drinks, hosiery, pants and overalls, oyster shucking, pork packing, canning and floral gardening.

It is believed that there are good openings for the establishment of plants to manufacture furniture, mattresses, brooms, screens, tubs and pails, harness, toys, wood novelties, sash, doors, blinds, shoes, hats, various kinds of garments for men and women, tents and awnings, soap, dairy products, wire fence, peanut products, cottonseed products and confectionery. And it is further thought that additional plants to make crates, boxes and baskets, fertilizers, wagons and hosiery can find profitable employment here. Indeed, so well

satisfied are the people of Suffolk that such is the case that a large amount of money can be secured here to join money and experience from elsewhere in their establishment and operation. During the past year there were established here a pork-packing company, pants and overalls factory, two hosiery mills, a buggy factory, a fertilizer factory, a packing and canning plant and the Suffolk floral gardens. Within the same time important additions were made to the size and capacity of a number of manufacturing concerns already engaged in business here. These things argue more strongly than words the advantages possessed by Suffolk, for they are the actions of men of experience who, after careful investigation or thorough trial, have backed their judgment with their money.

Some of the articles manufactured here reach widely-separated markets. For instance, the peanut pickers made in Suffolk go into all the Southern States and to far away Japan and Argentina; in fact, they are in use wherever the goober grows, while the fruit and vegetable and berry crates, boxes and baskets find buyers all along the Atlantic coast, from Canada to Florida. The log wagon made here has a wide vogue also, and is used by timber men throughout the entire South.

Twenty houses located here do a jobbing business in drugs, groceries, hay, grain, hardware, fuel and mill supplies. They find their trade among the merchants of many surrounding towns in Virginia and North Carolina, and are aggressively and persistently widening the zone of their operations. There are excellent openings here for the establishment of other jobbing houses, either in some of the lines already represented or in other staples. The unsurpassed transportation facilities, joined with banking facilities of proportions rarely enjoyed by cities of the same size, combine to make this an exceptionally good point from which to do a successful jobbing business.

The country immediately surrounding Suffolk is so well adapted to intensive farming that it is but a question of time until this will become the center of a very large and prosperous community of small farmers and truckers, than which there is no better feeder for a city. In the truck shipping season vegetables go from here to market by the trainload, and the steamship company operating between here and Norfolk runs three boats daily to carry the products of the many truck farms. The rare combination of soil and climate existing here renders possible the utilization of the lands for so many months in the year that from two to four crops are raised each year, rendering farming much easier than in those sections in which it is necessary to work refractory and unresponsive soil for each crop made. The truck crops are followed by corn, cotton, hay and various other staples that grow well after the high-priced vegetables have been gathered and marketed. Modern scientific methods are used by most of the farmers, and the consequence is that most of the lands cultivated are kept at top speed of production, and the agriculturists are among the most prosperous members of the community.

The history of the Bank of Nansemond, the condition of which is referred to above, is an interesting one, and serves to illustrate the manner in which the city has grown. This bank was established in 1869, the stockholders comprising most of the leading business men of Suffolk. It was the policy from the first, as it still is, to make the bank absolutely safe for the depositors rather than the bringer of big profits to the shareholders, and the earnings, after paying modest dividends, were

allowed to accumulate, without being divided or having stock issued to absorb them. The consequence is that while the stock has remained at the original figure, \$20,000, there is an accumulation of surplus that reaches \$800,000, and the book value of each share is now about \$4500, while the total resources are in the neighborhood of \$3,000,000. The old safe with which the bank started business is kept in the new building, which is fitted with the best there is in the way of vaults, as a reminder of banking as it was in the 60s. It would hardly withstand an attack by a modern burglar armed with a penknife and a toothpick. Many kindly stories are told of the organizer and the first cashier of the bank. One is that his habit was to carry the money home with him at night rather than leave it at the bank. Be that as it may, he undoubtedly had ideas about banking, and the institution stands today a monument to his wisdom in finance.

A National bank, organized only a few years ago, is also doing a prosperous business, and its resources carry the aggregate for the city to about \$3,500,000.

Suffolk has broad streets, many of them well paved with bitulithic and vitrified brick, and bordered by splendid trees that throw their shade over them and keep them pleasant throughout most of even the warmest day. The residence portions are marked by many beautiful homes of modern construction, and bearing evidence to the culture and refinement of their owners. An excellent system of public schools furnishes the young with the best of educational advantages up to the point where the college or university takes up the finishing work. There are some handsome churches, the attendance upon which tells of the religious character of the people and makes them orderly, law-abiding and charitable. The climate here is conducive to comfort the entire year, the mean annual temperature being about 60 degrees, the rainfall from 46 to 50 inches. The water supply is pure in quality and ample in quantity; the city has fine natural drainage and an excellent sewerage system, and the health of the people is far above the average.

We find here then a prosperous, healthful, busy city, with an enlightened, religious, orderly citizenship, full of opportunities for profitable manufacturing plants and commercial establishments, whose people are ready to give welcome and encouragement to those who come among them to make their homes and pursue their business careers.

GEO. BYRNE.

Three Southern men are among the officers of the National Saddlery Manufacturers' Association elected at Nashville last week as follows: President, Henry Diegel, Atchison, Kans.; vice-president, Fred Schoelkopf, Dallas, Tex.; treasurer, Albert Kuhlmeier, Chicago; secretary-commissioner, Henry Othmer, Chicago; executive committee, T. F. Hopkins, Rockford, Ill.; Charles A. Rogers, Hartford, Conn.; Albert Morsbach, Cincinnati, O.; Singleton Smith, Milwaukee, Wis.; W. A. Hardenbergh, St. Paul, Minn.; John Rossi, St. Joseph, Mo.; Tom Padgett, Waco, Tex. The association will meet at Richmond, Va., next year.

The Waco Real Estate Exchange, Ray C. Pollock, secretary, the thirty-fourth member of the Texas State Realty Association, with a membership of 20 firms, representing 45 of the leading real estate men of the city, came into existence March 1, 1912, and since then has worked in conjunction with the Business Men's Club and the Young Men's Business League in promoting the city's interest.

GOOD ROADS**WEEK'S HIGHWAY RECORD.**

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds Voted.

Graham, Va.—Town voted \$50,000 bond issue to improve streets, etc.

Keerville, Tex.—City voted \$20,000 bond issue to grade, gravel and repair streets and sidewalks.

Lebanon, Mo.—Laclede county voted \$50,000 bond issue to construct roads.

Morristown, Tenn.—Hamblen county voted \$25,000 bond issue to repair and rebuild macadam roads.

Pocomoke City, Md.—City voted \$35,000 bond issue to macadamize streets.

Bonds to Be Voted.

Greenville, Tex.—Hunt county votes May 25 on \$400,000 bond issue to construct macadam roads.

Selma, Ala.—Dallas county will vote on bond issue of from \$100,000 to \$150,000 to construct roads.

Waxahachie, Tex.—Ellis county votes May 11 on \$75,000 bond issue for road construction.

Winston (P. O. Winston-Salem), N. C. City votes in July on \$100,000 bond issue for street paving.

Contracts Awarded.

Baltimore, Md.—Paving Commission awarded contract at \$2412 for vitrified block pavement.

Carthage, Mo.—City awarded contracts amounting to \$17,395 for street paving.

Loudon, Tenn.—Loudon county awarded contract to build roads costing \$100,000.

Madisonville, Tenn.—Conroe county awarded contract at \$276,180 to grade 160 miles of roads and build required bridges.

Norfolk, Va.—Norfolk county awarded contract at \$12,000 to raise two miles of Gum Swamp road in Princess Anne county.

Richmond, Va.—City awarded contract for cement sidewalks and curbing.

Tampa, Fla.—Mutual Realty & Investment Co. awarded contract for two miles of shell paving 15 feet wide; amount available, \$10,000.

Tompkinsville, Ky.—Monroe county awarded contract at \$2200 per mile to build road; eight miles.

Wheeling, W. Va.—City awarded contract at \$15,340.32 for paving McCulloch street; concrete base; brick paving.

Contracts to Be Awarded.

Abingdon, Va.—Washington county will construct stone road from Bristol to Abingdon, 15 miles.

Baltimore, Md.—City receives bids until May 8 for grading, curbing and paving various streets; 8200 square yards; vitrified block.

Boydton, Va.—Mecklenburg county will construct 15.6 miles macadam road and 79 miles gray soil road in four districts.

Columbia, S. C.—Richland county receives bids until May 17 to resurface with artificially-bound macadam road from city limits to Hyatt Park, 7648 feet; width 25 feet.

Cullman, Ala.—City will construct cement sidewalks; cost \$15,000.

Nashville, Tenn.—City will construct granitoid curbing and sidewalks on various streets.

Richmond, Va.—City received bids until April 29 for constructing granolithic curbs and gutters, granolithic and brick sidewalks, granite spall paving, granite curbing, asphalt-block paving, etc.

Roanoke, Ala.—Randolph county will

expend \$10,000 to construct nine miles sand-clay roads.

Roland Park, Md.—Roland Park Company will grade 4.5 miles of streets, several acres of lots, together with clearing and stripping of top soil; 250,000 cubic yards excavation.

Somerset, Ky. — City appropriated \$6500 to macadamize and improve streets.

St. Louis, Mo.—City receives bids until May 17 for brick paving estimated to cost \$156,372; asphalt, \$41,576; bitulithic, \$38,091; wood, \$64,992.

MINING

Southern Copper in 1911.

The amount of primary copper smelted in the United States in 1911 was 1,067,232,749 pounds, an increase over the production of 1910 of 17,073,240 pounds. Of the total in 1911, Maryland produced 23,555 pounds, Missouri 640,411, North Carolina 13,696, Tennessee 18,965,143 and Texas 105 pounds, a total for the South of 19,642,913 pounds.

Daily Output of 2000 Tons.

It is reported that the Proctor Coal Co., Charles F. Finley, president, Williamsburg, Ky., will develop several additional mines at Red Ash, Ky., these developments to have a daily output of 2000 tons of coal and the machinery to be electrically driven.

Sunbeam Coal Co.

Messrs. C. W. Campbell, C. N. Davis, Douglas W. Brown and associates of Huntington, W. Va., have incorporated the Sunbeam Coal Co. with a capital stock of \$50,000.

West Penn Traction & Water Power Company.

The MANUFACTURERS RECORD is advised that the stockholders of the West Penn Traction Co., Wm. S. Kuhn, president, have voted to accept the proposition of the American Water Works & Guarantee Co., James S. Kuhn, president, both corporations of Pittsburgh, Pa., to organize the West Penn Traction & Water Power Co., with a capitalization of \$27,000,000. This new corporation will develop the water-power of Cheat River in West Virginia in connection with its previously organized Cheat River Hydro-Electric Co., controlled by the American corporation. The MANUFACTURERS RECORD recently detailed the company's plan to distribute electricity in West Virginia, Pennsylvania and Ohio.

Woodward Iron Co. Plans.

The Woodward Iron Co. of Birmingham is reported to have determined its plans for general improvements and new construction estimated to cost \$2,000,000. These betterments are said to include the immediate construction of a furnace with daily capacity of 400 tons of iron, contract for its construction being awarded to the Variety Iron Works of Cleveland, O., and 40 by-product coke ovens, for which contract has been awarded to the H. Koppers Company of Joliet, Ill., mine improvements and mining machinery for coal and iron development, etc. The immediate work is stated to involve an expenditure of \$1,000,000. This company's merger with the Birmingham Coal & Iron Co. and reincorporation with \$26,500,000 capitalization were recently detailed by the MANUFACTURERS RECORD.

Daily Capacity 125,000 Feet.

Reports state that D. E. Sheridan of Franklinton, La., will build a sawmill at Covington with daily capacity of 125,000 feet of lumber.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

NEW LUMBER RAILROAD.

Pine Bluff, Sheridan & Southern Will Develop Lands in Arkansas.

Concerning the Pine Bluff, Sheridan & Southern Railway Co., J. F. McIntyre & Sons, Inc., of Pine Bluff, Ark., say that it and the McIntyre-Mann Timber Land Co. were formed by them and associates for the purpose of buying 15,000 acres of hardwood timber lands in Grant, Dallas and Cleveland counties, Arkansas, and getting the timber to their mills at Pine Bluff. The incorporators are J. F. McIntyre, president of J. F. McIntyre & Sons, Inc., Pine Bluff; David Mann, president Commercial Bank, New Madrid, Mo.; Fred Mann, capitalist, Henderson, Ky.; W. H. Garaflo, president State National Bank, Little Rock, Ark.; R. R. McIntyre, treasurer J. F. McIntyre & Sons, Inc.

The railroad company named is in the market for 25 flat cars of 60,000 pounds capacity, one caboose and one locomotive of 50 or 60 tons weight, with 50-inch drivers, all standard gauge and modern. Cars must meet requirement of Master Car Builders' inspection.

The capital stock of the lumber company will be \$325,000, in shares of \$100. The directors are J. F. McIntyre, president; David Mann, vice-president; W. H. Garaflo, secretary and treasurer; Fred Mann and Robert R. McIntyre. The business of the corporation will consist of the purchase, lease and ownership of timber lands and other real estate, lumber, staves, other forest products and other personal property, operating saw and planing mills and other woodworking factories and the necessary financial operations in connection therewith. All the stock is subscribed and paid in.

The railroad is to be built from Sheridan to Mannville, Ark., 18 miles, and the company is also to have the right to lease and operate other railroads, especially the track of the St. Louis, Iron Mountain & Southern Railroad from Sheridan to Pine Bluff. Capital stock is \$126,000, of which \$32,000 is already subscribed. Subscription books for the rest of the shares are to be opened and the company will organize later.

In the railroad company, in addition to the directors heretofore named, are the following: R. A. McIntyre of Pine Bluff, Joseph Hamilton, Joe Lybrand, J. F. Butler, V. A. Ashcroft, A. Shackleford, Ed. Hamilton, Wm. Poole and C. K. Elliott of Pool, Ark.

TRACKS AND WAREHOUSES.

About \$1,000,000 to Be Spent for Improvements at Texas City Terminal.

The Texas City Transportation Co. proposes to make some extensive improvements to its property at Texas City, Tex., and a letter from there quotes H. B. Moore, vice-president and general manager of the Wolyin Line, as saying just after a meeting of the directors that a new pier will be erected on the site of the former Inman pier, immediately north of the present Texas City docks, and work upon it is to begin within a few weeks. It will be 900 feet long and 500 feet wide. Upon the southern half of it there will be built a double-decked steel and concrete warehouse. Contract for this, as well as for the pier, has been let to James Stewart & Co. of New York, and they are to be completed by August next. The pier will accommodate five large vessels.

It is further announced that five addi-

tional warehouses are to be built of steel and concrete. They are also to be ready by September. After the completion of these improvements the Texas City terminals will have accommodations for more than 250,000 bales of cotton, besides vast quantities of other products. More railroad tracks will be laid to handle the additional traffic, and the electric facilities will also be increased. All cars in the yards are to be hauled by electric motors.

During the summer a cotton compress will also be built, opposite warehouse No. 2 and in line with warehouse D. It will also be equipped with the latest machinery. It is estimated that more than \$1,000,000 will be expended for the various pieces of work, including the eight miles of storage tracks, for which the steel rails have been ordered.

Bids are being asked for the enlargement of the turning basin to 1000 feet wide and 30 feet deep.

BOUGHT A STREET RAILWAY.

Rockbridge Power Corporation Will Improve It and Will Build Hydro Plant.

John L. Livers of Lancaster, Pa., and Grottoes, Va., writes that W. G. Matthews of Clifton Forge, Va., and himself have bought the property of the Charlottesville & Albemarle Railway Co. of Charlottesville, Va., and will improve it. This is the Charlottesville street railway. L. T. Hanckel is president.

The new owners are interested in the Rockbridge Power Corporation, which supplies Buena Vista and Lexington Va., with light and power, and also in the Clifton Forge Public Service Corporation, which supplies Clifton Forge and Covington, Va. It is planned to build a hydro-electric plant in Goshen Pass, where a development of 8000 horse-power can be obtained, and transmission lines will be built to the cities named, besides Staunton, Va.; the Old Dominion Cement Co.'s plant at Fordwick, Va., and Waynesboro and Basic, Va. The contract for the transmission line between Clifton Forge and Covington has been let to and work started by Mr. Livers, who is an electrical engineer.

The officers of the Rockbridge Power Corporation are W. G. Matthews, president; P. M. Penick of Lexington, Va., vice-president; John L. Livers, electrical engineer; W. T. Paxton of Buena Vista, Va., secretary-treasurer.

VIRGINIAN'S NEW BONDS.

No Big Extension, But Plans for Improvement to Existing Line.

Raymond Dupuy, vice-president and general manager of the Virginian Railway, Norfolk, Va., is quoted in a report from there as saying that there is no foundation for the report recently circulated that the company would build an extension northwest to the Great Lakes; on the contrary, there are no ambitious plans in contemplation, but the present line will be fully developed.

Of the \$75,000,000 of bonds to be issued, \$25,000,000 are to be used to cover the present debt and the rest will be reserved for issue from time to time to meet requirements. The \$25,000,000 have been, it is stated, sold to the National City Bank, Kissel, Kunnicutt & Co. and Lee, Higginson & Co. of New York. The stockholders' meeting will take action May 4.

New Equipment, Rails, Etc.

The New Orleans, Mobile & Chicago Railway has ordered eight Mikado type locomotives and four Pacific locomotives from the Baldwin Works, Philadelphia.

The San Antonio, Uvalde & Gulf Railway has purchased four passenger cars

from the Fitzhugh-Luther Company of Chicago, two locomotives from the Lima (O.) Locomotive and Machine Works and 18 freight cars from the American Car & Foundry Co., St. Louis.

The Kansas City Southern Railroad is contemplating the purchase of 25 locomotives; also 1500 box, 1000 steel gondola, 400 flat and 100 automobile cars.

The St. Louis & San Francisco Railroad has ordered 37,000 tons of rails, most of them from the United States Steel Corporation.

The Texas City Terminal Co. is about to buy some electric motors for its yards.

The Western Maryland is expected to soon let contracts for about 15,000 tons of steel.

The Norfolk & Western Railway has built about 50 steel gondola cars at its Roanoke shops, and will build, according to a report from there, 450 more of the same type.

The Kanawha & Michigan Railway is reported to have ordered 1000 freight cars of various patterns from the Ralston Steel Car Co., Columbus, O.

The Washington (D. C.) Railway & Electric Co. is experimenting with a new type street car of increased seating capacity and having wide doors.

The Santa Fe, says a market report, has ordered cars thus: 1000 box from the Standard Steel Car Co., Pittsburgh; 1000 box, 250 automobile, 500 automobile-furniture and 200 tank cars from the American Car & Foundry Co., St. Louis; 500 box and 25 copper ore cars from the Pullman Company, Chicago; 500 box and 100 flat cars from the Western Steel Car Co., Chicago, and 50 air dump cars from the Western Wheeler Scraper Co., Aurora, Ill.

The Harriman Lines have bought 20 Pacific type locomotives from the American Locomotive Co., New York.

The Frisco system is reported to have authorized the purchase of 6000 freight cars.

The Maryland Steel Co., Sparrows Point, Md., is shipping over 2000 tons of rails, splice bars, etc., to the San Antonio, Uvalde & Gulf Railroad; also 2000 tons to the North & South Carolina Railroad.

The Texas & Pacific Railway, says a report from New York, has sold \$600,000 of 5 per cent. equipment trust notes covering 10 passenger and 10 freight engines, 20 passenger cars and 200 all-steel coal cars lately ordered.

The Jackson (Miss.) Railway & Light Co., it is reported, will purchase some new cars.

The Georgia Coast & Piedmont Railroad has ordered 400 tons of steel for two small bridges from the Virginia Bridge and Iron Works, Roanoke, Va.

Kinston Terminal Plans.

A letter to the MANUFACTURERS RECORD says that the directors of the Kinston Terminal Co. have elected L. Hines president at a meeting at Kinston, N. C. This is the local company which will build a railway from Kinston to Richland, in Onslow county, and possibly to Trenton, in Jones county. Mr. Hines is one of the men who own the Kinston and Snow Hill Railroad. A committee has been appointed to confer with the officers of the Dover & Southbound Railway in regard to extending the latter road from Dover to Kinston. By this plan the road to Richland would be completed by a short link between Kinston and Dover and give a continuous line from Snow Hill to Onslow county, and by very short extensions at each end the road would connect with the Norfolk Southern Railway's line to Raleigh and a steamboat terminus would be given at Trenton, which is on the Trent River, a short but deep stream which flows into the Neuse at Newbern. The project by the Terminal

Company is regarded as very important to that rich section.

Rumored Railroad Deal.

A press report from Atlanta says it is stated in railroad circles that the Louisville & Nashville Railroad has practically completed negotiations for the purchase of the Atlanta, Birmingham & Atlantic Railroad, which runs from Birmingham, Ala., to Brunswick, Ga., with branches to Atlanta and Thomasville. No confirmation of the report has been given.

The line would be of advantage to the Louisville & Nashville in giving a direct route to an Atlantic port, which would be especially valuable in connection with the L. & N.'s building of a double-track line from Nashville to Birmingham. It would also strengthen the connections with the Atlantic Coast Line, which controls the L. & N.

The Atlanta, Birmingham & Atlantic Railroad has been in the hands of receivers S. L. Schoonmaker and H. M. Atkinson for some time. It has 660 miles of line. The directors are H. M. Atkinson, P. S. Arkwright, S. J. Bradley, H. M. Milam and W. H. Wright, all of Atlanta.

New Pier at Lambert's Point.

Arrangements for the construction of the Norfolk & Western Railway's new coal pier at Lambert's Point, Va., have progressed to the extent that contract has been awarded to Henry Steers, Inc., of New York, for the breakwater, the dredging, the bulkhead and the substructure, which are to be completed in about nine months. Other contracts have not been let, but they are under consideration, and it is expected that they will be awarded within a week.

The pier will be 1200 feet long, and should berth six vessels, three on each side. It will have two car dumpers on the ground. The superstructure will be of steel. It is to have a capacity of about 6,000,000 tons a year, and the cost will be approximately \$1,500,000.

A late report from Norfolk says that a representative of the contractor is there going over the plans with the railroad men and arranging for beginning construction.

Substation at Mount Clare.

The Baltimore & Ohio Railroad Co. will build an electric substation at Mount Clare, Baltimore, for additional power to operate shop machinery and also to equalize distribution of current on its Baltimore Belt Line. Plans have been prepared for the building, which will be 50x87 feet, of brick and concrete, with concrete roof. Foundations and floors will also be of concrete. There will be a 15-ton traveling crane installed for handling machinery.

The apparatus in the substation will be of the latest type and design, and will effect a material saving in the operation of the Belt Line. By locating it at Mount Clare it will not be necessary to maintain a heavy direct current transmission line, the requirements at remote points being supplied by an alternating current. A further advantage will be derived in the increased efficiency of the shop motors at Mount Clare.

New Station at Hickory, N. C.

The Southern Railway Co. is receiving proposals from contractors for the construction of a new passenger station at Hickory, N. C., work on which will commence as soon as contract is awarded. The station will be of brick, with tile roof, the dimensions being 30 feet 2 inches wide and 132 feet long. There will be a white waiting-room, 20x36 feet; colored waiting-room, 23x28 feet; baggage-room, 16x28 feet, with an ample ticket office in the center of the building, together with neces-

sary sanitary toilets for both white and negro passengers. Included in the improvement will be the work of grading, drainage, macadam driveway and concrete and chert platforms.

The new station will give to Hickory better facilities, which will be ample to care for increased traffic anticipated for the future.

B. & O. Statement.

The Baltimore & Ohio Railroad's statement of earnings for March, excluding outside operations, shows operating revenue \$8,142,297, increase as compared with 1911, \$1,188,383; operating expenses \$5,610,245, increase \$866,110; net operating revenue \$2,532,052, increase \$322,273.

For the nine months of the fiscal year up to March 31 the operating revenues totaled \$68,437,417, increase as compared with the same period of last year \$2,160,377; operating expenses, \$48,169,850, increase \$71,062; net operating revenue \$20,267,567, increase \$2,089,315.

It is stated that outside operations will show a deficit in net for March of \$63,891, and for the nine months \$487,369.

To Finance an Extension.

The Bankers' Trust Co. of Houston, Tex., says a letter, is proposing to finance an extension of the Bartlett & Western Railway from Bartlett into Cameron, Tex., 32 miles. This road is now operating 23 miles between Bartlett and Florence, Tex., and it is the purpose of the railroad company to connect at Cameron with the Santa Fe and the San Antonio & Aransas Pass roads. The trust company will furnish the capital for the new construction, provided satisfactory right of way and bonuses can be secured.

May Do Some Construction.

An official letter says that the Chesapeake & Ohio Railway Co. has leased the Island Creek Railroad and has also acquired the capital stock of the Logan & Southern.

The Island Creek line runs from Logan, W. Va., on the C. & O., to Holden, five miles. The Logan & Southern proposes to build between Logan Bridge and Gilbert. G. W. Robertson of Huntington, W. Va., is president.

Railroad Notes.

President W. F. Jones of the Chesapeake Beach Railway, Washington, D. C., says that the control of the line has not passed, this being a denial of recent press reports that F. J. Lisman & Co. of New York had bought it.

Concerning recent rumors that the Illinois Central was surveying for a line southwest from Birmingham, a report from there quotes one of the engineers as saying that the line run is from Birmingham to Tuscaloosa, Ala., and from there direct to Jackson, Miss. It is further rumored that the Illinois Central will get control of the two roads owned by John T. Cochran of Mobile, in order to obtain entrance to that city.

Tennessee Hydro-Electric Co.

The Tennessee Hydro-Electric Co. has applied to Congress for permission to build dams across Clinch and Powell rivers, in Tennessee. It plans to construct two dams on Clinch River, near Island Ford, to generate electricity for transmission to Nashville, Chattanooga and Knoxville. This company was recently reported as incorporated with capital stock of \$100,000, and it may now be stated that its incorporators were F. M. Butler, J. R. Cox and J. H. Wallace of Clinton, Tenn.; Jas. B. Cox of Knoxville and J. R. Paul of Pittsburg.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

Bladenboro Contracts Awarded.

The Bladenboro (N. C.) Cotton Mills has awarded contract to J. W. Robertson of Raleigh for erecting a 103x419-foot brick building costing \$35,000 to \$40,000. This company has awarded contract for its textile machinery to the Howard & Bullock American Machine Co. of Pawtucket, R. I. Its equipment will include 8000 spindles, 450 horse-power steam plant costing \$7500, etc., for a daily capacity of 10,000 pounds of cotton yarn, and employing from 150 to 175 operatives. About \$115,000 will be the cost of all the machinery. R. C. Biberstein of Charlotte is the company's architect-engineer in charge. The organization and plans of the Bladenboro company were previously stated, the capital stock being \$300,000.

Adding New Machinery.

The Springfield (Tenn.) Woolen Mills Co., previously mentioned as contemplating additions, has awarded contract for new machinery costing \$12,000. This new equipment includes 4 broad looms, 60-inch card burr picker, mixing picker and 3 230-spindle mule frames. It gives the company a total of 5 sets of cards, 11 mules, 2 burr pickers, 2 mixing pickers, 52 broad looms and finishing equipment to handle the mill's weekly capacity of about 2000 pairs of woolen blankets, employing 125 operatives. The company expects soon to place an order for two double-acting nappers.

The Cotton Movement.

In his report for April 26 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 239 days of the present season was 14,642,897 bales, an increase over the same period last year of 3,456,251 bales. The exports were 9,658,040 bales, an increase of 2,803,144 bales. The takings were, by Northern spinners, 2,084,839 bales, an increase of 171,067 bales; by Southern spinners, 2,155,253 bales, an increase of 241,936 bales.

Stonewall Cotton Mills.

T. L. Wainwright, president of the Stonewall (Miss.) Cotton Mills, writes to the MANUFACTURERS RECORD as follows: "We are now erecting a finishing-room 41x128 feet, one story and basement, for tenting, calendaring and otherwise finishing colored and other cotton goods. We are also erecting a modern dyehouse, the building being 50x236 feet, one story. It will be some time yet, perhaps three or four months, before these buildings, with their equipments of machinery, will be completed."

Union-Buffer Power Improvements.

The Union-Buffer Mills Co., Union S. S., will reorganize power plant. It will erect an addition to boiler-house 68 feet long by 51 feet wide and a stack 9 feet 6 inches in diameter by 200 feet high, for which it is now receiving proposals. The company has awarded contracts for six horizontal return-tubular boilers 78 inches diameter, two condensers, two pumps and

necessary piping. Charles T. Main of Boston is the engineer in charge of the improvements.

Southern Aseptic Cotton Co.

The Southern Aseptic Cotton Co., Chattanooga, is incorporated with \$25,000 capital stock and the following officers: President and general manager, Robert T. Cameron; vice-president, R. Meigs Copeland; secretary-treasurer, J. Watkins; superintendent, Oswald F. Rothe. This company was lately mentioned as installing machinery to manufacture absorbent cotton and absorbent cotton gauze.

Textile Notes.

The Richmond Hosiery Mills of Reesville, Ga., will install electrical power equipment, obtaining its electricity from the East Tennessee Electric Light & Power Co. Plans are in charge of Lockwood, Greene & Co. of Boston and Greenville, S. C.

The Deep River Mills, Randleman, N. C., will add 30 40-inch revolving flat-top cards, 20 deliveries of metallic drawing, one 6x12 slubber and 72 spindles. Contract for this machinery has been awarded to the Saco-Pettee Company of Newton Upper Falls, Mass., and Biddeford, Maine, through its Southern agent, A. H. Washburn of Charlotte, N. C.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

For Glucose Manufacturers.

Nicolas Georgiades, general commission and insurance agent, Constantinople, Turkey, writes to the MANUFACTURERS RECORD:

"I should esteem it a great favor if you would kindly give me the names of as many glucose manufacturers as you can who might be open to export into this country."

Wanted for Cuban Trade.

Balestra & Binda, Amareura 11, Apartado 1312, Habana, Cuba, write to the MANUFACTURERS RECORD:

"We would be glad to enter into connection with some shoe manufacturer, flour mill, hardware house, butter, condensed milk firm, which products we look for the sale of on a commission basis."

Stoneworking Machinery.

H. M. Frith, Nassau, Bahama Islands, writes to the MANUFACTURERS RECORD:

"I want light machinery for stoneworking, such as saws, drills, etc. By light I mean on a small scale and to run with small horse-power. The stone is soft and just cutting is needed; not polishing or anything of that sort."

The Kentucky Manufacturers' Association has been organized with John F. Bible of Hopkinsville, president; Philip S. Tuley of Louisville, J. W. Allen of Owensboro and James E. Rankin of Henderson, vice-presidents, and F. P. Toof of Paducah, treasurer.

In celebration of the twenty-fourth annual assembly of the Georgia Chautauqua, the *Herald*, of that thriving Georgia city, published on April 14 an issue of 54 pages, in itself an advertisement of progress and prosperity of the community.

MECHANICAL

Features of Automatic Sprinkler Installations.

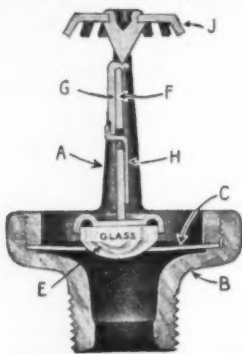
The piping layout for automatic sprinklers and sectional views of the sprinkler device which forms a part of the Grinnell



GRINNELL SPRINKLER HEAD.

automatic sprinkler as manufactured by the General Fire Extinguisher Co., Providence, R. I., are shown in the accompanying illustrations.

The efficiency of this equipment depends upon the operation of the automatic heads fitted about every 10 feet on the lines of piping, as shown in one of the illustrations. These heads are designed usually to fuse



SECTIONAL VIEW OF HEAD.

at about 160 degrees F. The reliability of the device is realized when it is understood that it has to remain frequently for years and then to operate with certainty upon 10 or 15 seconds notice. The fact that failures are so few as to be practically negligible is evidence of this quality.

The operation of the Grinnell sprinkler heads may be understood by reference to

three parts are held together by soft solder fusing at 155 degrees.

As soon as the temperature reaches this point disruption of the strut begins and ultimately takes the form of a rocking motion, one part about the other. During this movement the flexible diaphragm, with the full water pressure under its entire area, holds tightly against the glass valve until, as the strut finally falls apart, both valve and strut are thrown out into the room; then a stream of water, under full pressure, striking the deflector, is scattered in all directions like a hard-driven rain. After the sprinkler system has extinguished the fire the one or more heads which have been operated are removed and new heads are substituted. The water is turned on again, and the system is ready for the next attack of fire.

The piping layout for these sprinklers is a matter meriting careful attention, as it must be so graduated in size as to provide best results with a given expenditure in pipes and fittings; that is, with the smallest pipe sizes which will take care of the necessities. At the same time the pipes must be large enough to provide a sufficient flow of water to permit a number of sprinklers to operate under full pressure for a considerable time in case of a stubborn fire. The subject of proper drainage of the pipes must also be taken into consideration. The large illustration herewith shows a plan view of such a sprinkler system. To protect the portion between beams a line of pipe is shown in each bay. The sprinklers as shown are usually spaced about 10 feet apart, while the lines are also about this distance apart. The water main is hung from the beams and is placed as close to them as possible. The line is given a gradual pitch toward the main, and the main is given a pitch toward the riser, so that the entire system may be drained to the basement through the main supply riser where a draw-off valve is provided.

Moloney High Efficiency Transformers.

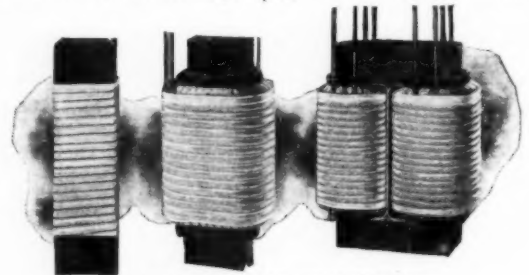
In this day of Southern progress we hear a great deal about water-power development and high-tension transmission lines extending for miles over the country, overcoming obstacles of distance and adverse conditions to furnish the powerful electric current for various industries. An important part in this system is the high-tension transformer, the function of which

necessary for practical application for power purposes.

The simplicity of the transformer is shown in the accompanying illustrations, in which some of the detailed parts are presented. One of the illustrations shows the core and coil in what are known as the core type of transformer. This core type differs from the shell type, in that the core has the true form of the horseshoe magnet

place. They also project up and through the cast cover in such a way that the entire transformer, including oil, can be picked up and shifted from place to place. The lead wires are brought out to corrugated porcelain bushings in the top, facilitating connection to bus bars or feeders.

The transformer, as used with water-cooled coils, is shown in the illustration of type "E." This case is made of boiler-



CORE AND COILS FOR TRANSFORMER.

with closed bar and the copper wire on the outside, while in the shell type construction the core surrounds the copper.

The common practice in lighting and power installations is to use 50 K. V. A. and smaller sizes in a cast casing fitted for pole suspension. This Pole type Moloney transformer is shown in one of the illustrations. It may be used on interior



POLE TYPE TRANSFORMER.

installations also, either with or without the hanger irons. For transformers of more than 50 K. V. A. the type "C" case is used for interior installation, such as central or substation work. As shown in the type "C" illustration, the corrugations are three inches deep, which greatly increases the radiating surface of the transformers. This type, like the Pole type, is oil-filled, self-cooled. A mineral oil, which

iron plate, seam-riveted and caulked, with the bottom cast directly into the base. The method of securing coils and cover is similar to that of type "C."

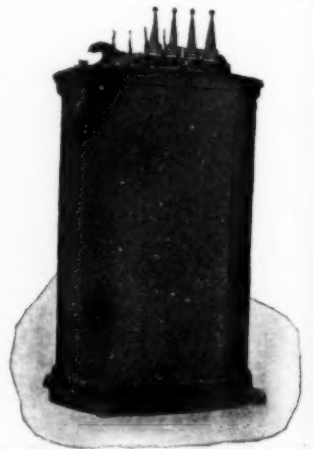
These transformers are manufactured by the Moloney Electric Co., St. Louis, Mo., which makes a specialty of high-tension



TYPE "C," OIL FILLED, SELF COOLED.

sion transformers for power and lighting service.

With the rapid development of hydroelectric power plants and other economical means of generating electricity, it is not too much to expect that the day will soon arrive when towns of 300 inhabitants and over and farmhouses located in well-settled country will be in position to re-

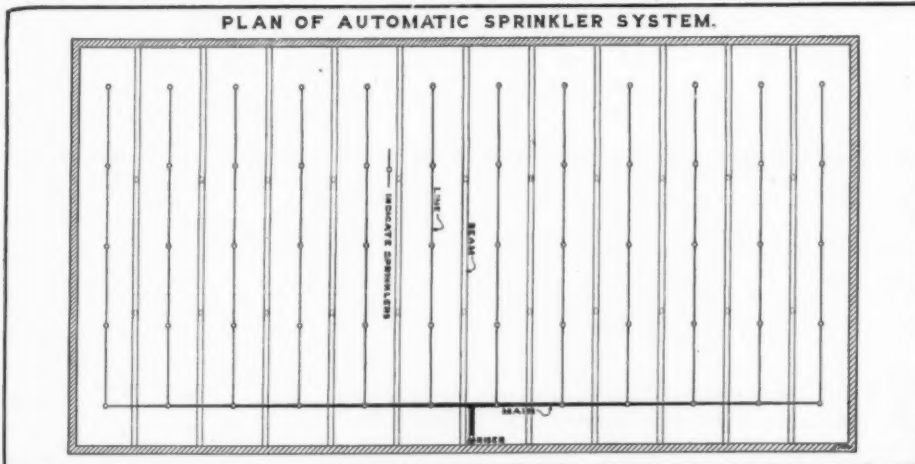


TYPE "E," OIL FILLED, WATER COOLED.

ceive lighting and power service through the use of high-tension transformers.

Patterson Blocks for a Southern Company.

The type of large six-shaft metal blocks recently furnished for the Atlantic Coast Line Railway Co. by the W. W. Patterson Company, 57 Water street, Pittsburgh, is shown in the accompanying illustration.



PIPE LINES FOR GRINNELL AUTOMATIC SPRINKLERS.

the illustrations. The body, B, screws into the Tee in the line pipe, and the yoke or frame, A, screws into the body and carries the deflector, J. Between A and B is held a flexible diaphragm, C, with a half-inch hole in the center. Into this hole fits the hemispherical glass valve, E, held in position by a small metal cap and a strut of three pieces, F, G and H. These

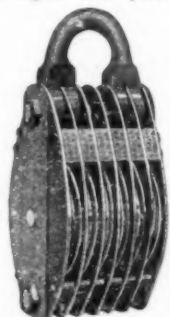
is to receive the voltage at about 2200 volts and to step it up as high as 110,000 volts, if necessary, then with the same type and capacity of transformer located at the distributing end it is stepped down again to low voltage, so that it can be commercially handled. This high voltage is necessary in conducting electric current over long distances, but the low voltage is

is a fractional distillation of petroleum, is used. It is free from moisture and contains no acids, alkali or sulphur compounds. This type "C" case consists of the corrugated sheet shell cast-welded into the heavy base, into which heavy anchor bolts are also cast. These are so arranged with running thread and lock nuts that they hold the transformer in

These blocks are for derrick cars of 50 tons capacity, and were especially designed by the Patterson Company. They were shipped in less than two weeks after the order was received.

In the construction of these blocks the shackle was forged from the solid billet, 6x6 inches, and the slots were machined in the shackle, so that there is no weld in the shackle. It was finished 2 5/8 inches round and 5 inches in diameter at the boss of the eye.

Instead of the usual gaspipe separators between the plates, these blocks have four cast-iron fillers, through which are run 3/4-inch bolts, making the blocks very strong and rigid. The plates are 5-16



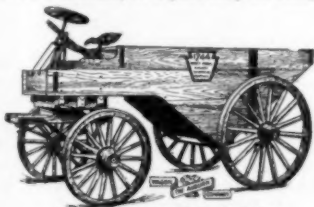
780-POUND PATTERSON BLOCK.

inches thick, outside straps 6x1 1/2 inches, head bolt 2 1/4 inches, sheave pin 2 1/2 inches, bottom bolt 1 1/2 inches, sheave 16 inches in diameter and grooved for 3/4-inch cable, with phosphor-bronze self-lubricating bushings, which require no oil. Each block weighs 780 pounds. These blocks were furnished to E. B. Pleasants, chief engineer, and C. T. Nelson, inspector of the Atlantic Coast Line Railway Co. at Wilmington, N. C.

This company, in extending its sales throughout the Southern field, gives prompt attention to special designs to meet any conditions which may be required of its blocks. Its energies are devoted to the manufacture of blocks of all kinds, and its experience ensures the quality and reliability of its blocks.

The Auburn Stone Spreader Wagon.

The Auburn Wagon Co. of Martinsburg, W. Va., which was originally established in Auburn, N. Y., in 1882, but removed to Martinsburg in 1896, has placed on the market a new design of contractors' stone spreader wagon. The spreading of stone or other material is accomplished by means of a sliding door, operated by a wheel placed by the side of the driver. As shown in the accompanying illustration, a pinion on the shaft of the wheel engages teeth on the rod connecting directly with the door. The material may be spread to any desired thickness, or a part may be dumped



"NEW AUBURN STONE SPREADER"

in one place and the spreading shut off until arriving at another place where the material is needed. The stone is spread for width of about four feet, and does not interfere with the rear wheels.

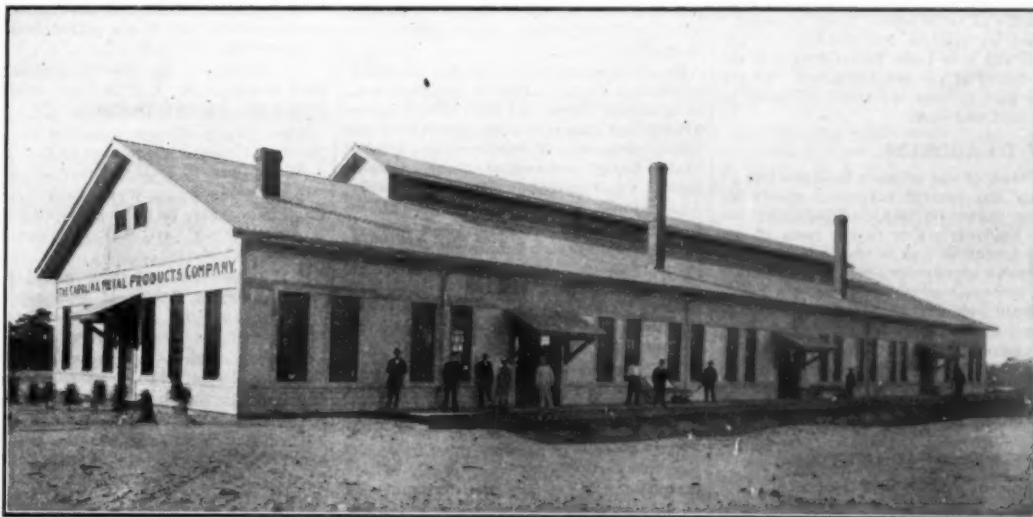
This wagon is built in capacities of 1, 1 1/2, 2, 2 1/2 and 3 cubic yards. It is described as simple, strong and of light draft. The company guarantees to replace free of charge any broken steel axle in this wagon, no matter what the load or what the circumstances may be under which it was broken.

"Good Roads" Booklet No. 15, issued by the company, describes this and other

dump wagons, dump carts, farm wagons, heavy trucks and drays manufactured by the company.

Carolina Metal Products Co.'s Plant.

The recently-constructed plant of the Carolina Metal Products Co. at Wilmington, N. C., renders that company ready to begin operations in a short time. This is a Wilmington manufacturing corporation, with a capital of \$150,000, and of which the officers are Theodore G. Empie, president and general manager; John H. Kuck, treasurer; John P. Council, vice-president, and Mears Harriss, secretary.



THE CAROLINA METAL PRODUCTS CO.'S BUILDING AT WILMINGTON, N. C.

of Wilmington. In addition to the first three of these officers, the board of directors includes M. J. Corbett of Wilmington and Perry Van Horne of Canton, O.

The accompanying illustration shows the first unit of this manufacturing plant as completed. It is 200x50 feet, of heavy wood frame construction, covered with metal rock-face brick and stone siding and Spanish metal tile roofing of anti-corrosive No-Co-Ro metal, all illustrating the products of the company. The equipment consists of the most efficient machinery obtainable for the manufacture of these products. Its list of products includes plain brick siding, rock-face brick siding, rock-face stone siding, beaded siding, weather-board siding, cluster tiling, roll and cap seam roofing, pressed standing seam roofing, corrugated V-Crimp roofing, special tile roofing, metal shingles, steel ceilings,

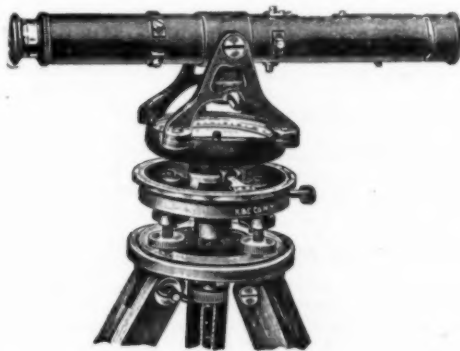
Schlaflly patents through special arrangements perfected with the Canton Culvert Co. of Canton, O., owner of the patents. The territory is unlimited in so far as the sale of general sheet-metal products is concerned.

Geo. P. Galvin, St. Louis, an experienced sheet-metal maker, has been engaged as general sales manager. The company has just issued a booklet giving the story of No-Co-Ro metal, which treats of corrosion, its causes and remedy. This booklet, price-lists and other information may be obtained on request to the company.

New K. & E. Surveying Instruments.

A new line of surveying instruments manufactured for a special class of work in accordance with the suggestions of the head of one of the leading agricultural colleges has been added to the output of the Keuffel & Esser Company, Hoboken, N. J. These instruments have been termed "Farm Surveying Instruments," but the nature of their construction does not limit their use to farm surveying, and they are equally efficient instruments for the use of the architect, builder or contractor.

The accompanying illustration shows the K. & E. improved farm transit, with compass. The telescope is 10 inches in length, with object glass one inch in diameter, and shows objects in their natural positions. The telescope may be tilted for plumbing lines and reading horizontal angles between points not in the same plane. A bubble fitted in the telescope



FARM SURVEYING INSTRUMENT.

eaves troughs, roof and box gutters, conductor pipe, ridge roll and V-capping, mitres, end pieces, etc., and "Acme" (Nestable) metal culverts and "Imperial" riveted corrugated metal culverts, curved corrugated sheets, etc.

The company operates, in so far as corrugated culverts are concerned, in North and South Carolina exclusively under

allows the use of the instruments as a leveling instrument. The horizontal circle is graduated to degrees with vernier reading to five minutes. The compass needle is two and one-half inches long, and the compass circle is graduated to degrees. These instruments have been manufactured with a view to reliable but economical construction, strongly and accurately

built for the purposes of the landscape gardener, road builder and farmer. The line includes farm transit without compass and farm levels, as well as the farm transit with compass. A pamphlet describing these new instruments has recently been issued.

The King Drum Radiator.

The gas radiator stove shown in the accompanying illustration was designed and patented by J. R. King, and is manufactured by the Royal Stove Co., 414 W. 4th street, Oklahoma City, Okla. It was designed with a view of producing a gas

heater of efficiency with the greatest practical economy in the amount of gas required. The manufacturer states that its unique design with the illuminated front, as shown in the illustration, with nickel trimmings, etc., make it a very attractive stove, and that it has at the same time proven to be an effective and economical heater.

The gas flame plays upon the flame plate and is carried toward the front and top of the stove, then into the drum radiator, circulating in the drum, where it is retarded until all the gas is completely burned up. It thus produces all the heat obtainable from the amount of gas that



KING GAS DRUM RADIATOR.

enters the burner. It is claimed that this process almost doubles the heating capacity as compared with stoves in which a good portion of the gas is allowed to escape without retardation.

The King reflector used in connection with this drum radiator completes the efficient construction of these reflector stoves.

Construction Department

TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "it is reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription to the Daily Bulletin is included for the contract period.

BRIDGES, CULVERTS, VIADUCTS

Ala., Birmingham.—Jefferson county will construct five reinforced concrete bridges; 40-foot span over branch on South Bessemer Rd. near Grassell; 20-foot span over Bessemer Rd. one mile below Grassell; 60-foot span on road at Rutledge Springs; 20-foot span on Boyles and North Birmingham Rd. and 20-foot span on Mulga Rd. near Mulga. Address County Commissioners.

Ala., Decatur.—City will construct two reinforced concrete bridges over Dry Creek on Danville and Courtland roads, respectively; bids received until May 7; H. A. Skeggs, Mayor. (See "Machinery Wanted.")

Ark., Van Buren.—City Council granted franchise to Fort Smith Light & Traction Co., Fort Smith, Ark., to build steel viaduct over railroad tracks at approach of Fort Smith-Van Buren bridge.

Ga., Atlanta.—City will expend \$53,000 to construct steel span across railway crossing; 160-foot concrete approaches; R. M. Clayton, engineer in charge; contract recently noted awarded by city and Southern Railway to Griffin Construction Co. of Atlanta.

Ky., Elkhorn.—Pike county will construct bridge across Russell Fork of Big Sandy River. Address County Commissioners, Pikeville, Ky.

La., Tallulah.—Madison Parish Police Jury has indefinitely postponed date of opening bids to construct five bridges; A. L. Slack, secretary. (Recently noted to receive bids May 1.)

N. C., Wilmington.—Tidewater Power Co. will erect concrete trestle across Banks Channel; bids to be in before May 15; plans and specifications with A. B. Skelding, general manager. (See "Machinery Wanted.")

Tenn., Humboldt.—Lonohe Gin & Mill Co., capital stock \$4000, incorporated by J. P. Penn., H. M. Ridgeway, G. S. Martin and others.

Tex., Aransas Pass.—San Antonio, Rockport & Mexican Railway, San Antonio, Tex., included all bridge construction on new line in contract let to Shattuck-Edinger Co. of Los Angeles and San Francisco. (Recently noted to build bridge across Morris and Cummings cut.)

Tex., Dallas.—Southern Traction Co. awarded contract to W. C. Jucksch, Malvern, Ark., to construct timber and steel bridges across Trinity and Brazos Rivers; cost \$150,000 and \$25,000; total cost of improvements, \$200,000; Luther Deans, engineer in charge. (Karner Bros. & Co. recently noted to let contract.)

Tex., Fowlerton.—San Antonio, Uvalde & Gulf Railroad, E. R. Breaker, chief engineer, San Antonio, Tex., awarded contract to El Paso Bridge & Iron Co., El Paso, Tex., to construct four river bridges; contract is for steel work; railroad will build concrete piers and abutments; total cost \$200,000. (Recently mentioned.)

Va., Chester.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., to construct iron bridge.

Va., Independence.—Grayson county will construct steel bridge over Elk Creek; bids received until May 11; P. St. J. Wilson, State Highway Commissioner, Richmond, Va. (See "Machinery Wanted.")

CANNING AND PACKING PLANTS

Ala., Greenville.—Sidney Long and associates contemplate building cannery.

Ky., Elizabethtown.—H. E. Beck, Bowling Green, Ky., and B. V. Brown, Louisville, Ky., are interested in establishing cannery in connection with industrial school.

Md., Bushwood.—W. E. Robinson (recently noted interested in cannery establishment) states Bushwood Canning Co. will be organized; will erect 80x50-foot ordinary construction building; directors meet May 15.

Miss., Columbia.—Whitfield Bros. will establish cannery; daily capacity 1000 cans; machinery ordered.

Miss., Hattiesburg.—W. M. Conner and D. E. McInnis purchased site, 200x420 feet, on which to build cannery; concrete sheet iron and wood; plans being prepared. (Recently reported to organize company with \$50,000 capital stock.)

Miss., Seminary.—Company has been incorporated with \$4000 capital stock by Alex. Lott, J. C. McGowan, Isaac Aultman and others.

N. C., Wilmington.—Dixie Brokerage Co., Grand Theater Bldg., is interested in promoting establishment of \$100,000 cannery. (See "Machinery Wanted.")

Tex., Hillsboro.—Charles P. McSweeney, Fort Worth, Tex., will establish pork-packing plant; weekly slaughtering capacity of 1000 hogs; site to comprise 20 acres.

Va., Northfork.—Armour & Co. awarded contract to Graham Contracting Co., Graham, Va., at \$7525 to erect branch plant previously mentioned.

Va., Warsaw.—Warsaw Manufacturing Co. incorporated; P. P. Lipscomb, president; A. B. Wright, vice-president; W. T. Tyler, secretary and treasurer.

COAL MINES AND COKE OVENS

Ala., Birmingham.—Neill Coal Co., capital stock \$20,000, incorporated; Robert Neill, president; William Neill, vice-president; C. R. Atkins, secretary-treasurer; J. C. Neill, general manager.

Ala., Kimberly.—Central Coal Co., Birmingham, Ala., reported to contemplate developing new mine; cost \$50,000 to \$100,000.

Ky., Red Ash.—Proctor Coal Co., Charles F. Finley, president, Williamsburg, Ky., is reported as to develop several additional mines for daily output of 2000 tons coal; machinery to be electrically driven.

Ky., Viper.—Perry County Coal Co., capital stock \$100,000, organized by J. H. Sharp, W. R. Bradford, F. A. Utz and others.

Mo., Kansas City.—Hazelton Coal Co., capital stock \$15,000, incorporated by R. P. Dow-

ell, W. H. Condit, J. E. Whitehead and others.

W. Va., Charleston.—General Colliery Co., capital stock \$25,000, incorporated by George W. Weeks, M. Harlan Starr, Daniel B. Parent, Order Harrold and A. J. Priest, all of Detroit, Mich.

W. Va., Huntington.—Sunbeam Coal Co., capital stock \$50,000, incorporated by C. W. Campbell, C. N. Davis, Douglas W. Brown and others.

COTTON COMPRESSES AND GINS

Ala., Gadsden.—Matthews and Austin, Hattiesburg Miss., will, it is reported, build cotton compress.

Ga., Berner.—Berner Gin Co., capital stock \$5000, incorporated; J. B. Jackson, president; J. D. Lane, secretary-treasurer.

Miss., Tupelo.—Tupelo Compress Co., capital stock \$100,000, incorporated by R. C. Clark, J. W. Wallace, R. C. McGaughey and others.

Okla., Wynnewood.—Wynnewood Compress Co., capital stock \$16,000, incorporated by W. B. Crump, Noah Lael, P. R. Eskridge, John L. Case and others.

S. C., Charleston.—Maybank & Co. will, it reported, invest \$500,000 to purchase river-front site and erect compress and warehouse system with capacity 100,000 bales cotton.

Tenn., Dyersburg.—Farmers' Cotton Oil Co. increased capital stock from \$30,000 to \$65,000; ordered additional gin and three-press oil mill.

Tex., Ector.—Dulaney Gin Co. will erect building, 20x76 feet; metal construction; cost \$1200; cost of machinery \$6000; J. J. Pritchett, president; G. M. Huffaker, secretary; H. D. Dulaney, manager. (Recently noted incorporated with \$10,000 capital stock.)

Tex., Flatonia.—Tom Migal will install additional machinery and increase capacity of cotton gin at Parha, three miles from Flatonia.

COTTONSEED-OIL MILLS

Okla., Hugo.—Planters' Cotton Oil Co., capital stock \$40,000, incorporated by R. V. Womack, J. H. Jackson, C. L. Webb and others.

Okla., McAlester.—George H. Walker, Muskogee, Okla., will establish hydraulic cottonseed-oil mill, to cost \$100,000.

Tenn., Dyersburg.—Farmers' Cotton Oil Co. will install three-press oil mill. (See "Cotton Compresses and Gins.")

Tex., Eagle Lake.—Company will be organized with \$50,000 capital stock to establish cottonseed-oil mill. Address Eagle Lake Business League.

Tex., Gilmer.—Gilmer Cottonseed Oil Co. will build six-press cottonseed oil mill to cost \$25,000; M. E. Sullenberger, president; B. D. Futrell, vice-president; H. P. McGaughey, secretary-treasurer. (Recently reported incorporated with \$25,000 capital stock.)

DRAINAGE AND IRRIGATION

Ark., Helena.—Beaver Bayou Drainage District Commissioners rejected bids to construct drainage system and readvertised for bids to be opened May 30; Johnson Bayou ditch, 307,000 cubic yards; Lick Creek ditch, 539,000 cubic yards; Beaver Bayou ditch, 675,000 cubic yards; Hillside ditch, 85,000 cubic yards; C. B. Bailey, consulting engineer, Wynne, Ark.; J. A. Guissinger, resident engineer, Helena. (Call for bids lately noted.)

La., New Orleans.—E. L. Chappuis, president, Louisiana Alluvial Land Co., states 51,000 acres owned in St. Bernard parish by his companies will be divided into 1000-acre divisions, then subdivided into 10-acre farms; drainage of entire tract contemplated; surveys by John A. Kruse Engineering Co. of Chicago and New Orleans. (Company's plans previously noted.)

La., New Orleans.—Dr. L. R. Williams, Chicago, Ill., and associates contemplate reclamation of land near New Orleans.

La., St. Rose.—Pontchartrain Drainage Board, T. L. Macon, president, will arrange for \$220,000 bond issue for Subdrainage District No. 1, embracing 7200 acres; also proposes to build road to Kenner, La.

Tenn., Dresden.—Middle Fork & Spring Creek Drainage District is being promoted by J. B. Overton of Greenfield, Tenn., B. T. Lewis of Dresden, Tenn., and Enoch Brock of Sharon, Tenn.; district not established; directors not appointed; territory embraces 8500 acres of Spring Creek and

Middle Fork of Obion River bottoms; recommendations include dredge ditch for Spring Creek and levees for Middle Fork; levees to be 600 feet apart; cost \$12 to \$16 per acre; L. L. Hildinger of Morgan Engineering Co., Memphis, Tenn., engineer in charge; date of letting contract not determined. (Previously noted.)

Tenn., Union City.—Obion River Levee and Drainage District, T. O. Morris, member of committee, will expend \$400,000 to drain 45,000 acres of land; as recently stated, work involves 55 miles of main river levee and 25 miles of open ditches, etc.; W. C. Kelly, engineer in charge.

Tex., San Benito.—Drainage District No. 1 votes May 9 on bond issue of \$460,667.28 to construct drainage system. Address Commissioners Drainage District No. 1. (Previously mentioned.)

ELECTRIC PLANTS

Ala., Athens.—City will vote on bond issue to install equipment at electric-light plant to furnish day current of 500 horse-power. Address The Mayor.

Ark., Argenta.—City Council appropriated \$18,500 to enlarge and increase capacity of electric-light plant. Address The Mayor.

Ark., Imboden.—W. H. Skinner and J. W. Brown purchased Pochontas Ice & Power Co.'s plant for \$7400 and will remodel.

Ark., Lake Village.—Delta Light, Power & Manufacturing Co. has franchise to construct electric-light plant; E. J. Lenz, Greenville, Miss., is chief engineer and superintendent.

Ark., Little Rock.—Little Rock Railway & Electric Co. will lay electric wires (except trolley wires) underground; William Von Paul, chief engineer Ford, Bacon & Davis of New York, will be in charge.

Ga., Cartersville.—City votes May 25 on \$32,000 bond issue to extend electric-light system, etc. Address The Mayor. (See "Schools.")

Ga., Macon.—W. J. Massee (president of Central Georgia Power Co.) wires Manufacturers Record: "I am going to build large steam plant. Now in market for machinery." (See "Machinery Wanted.")

Ga., Stone Mountain.—Town contemplates construction of electric-light plant. Address Town Clerk.

La., New Orleans.—Sewerage and Water Board receives bids until June 30 at office of F. S. Shields, secretary, to erect power-house No. 2, contract No. 40-d; building to be of steel and masonry, 100x60 feet; plans and specifications furnished on application to board and deposit of \$50; George G. Earl, general superintendent. (Recently mentioned.)

Miss., Richton.—Richton Lumber Co. (recently noted to build light and power plant) states will not build electric-light plant.

N. C., Mt. Holly.—Southern Power Co., Chas. I. Burkholder, general manager, Charlotte, N. C., advises further relative to 10,000-horse-power steam turbine electric plant; building of brick, steel and concrete, about 200x125 feet; contract for steel work and buildings not yet let; all machinery contracts awarded, as previously noted; to be rushed to completion.

S. C., Barnwell.—City votes May 8 on bond issue to construct electric-light plant. Address The Mayor. (Recently mentioned.)

Tex., New Braunfels.—City will construct electric-light plant and water-works; bids opened May 22; W. K. Palmer Company, engineer, 717 Dwight Bldg., Kansas City, Mo.; C. A. Jahn, Mayor. (See "Machinery Wanted.")

FLOUR, FEED AND MEAL MILLS

Ky., Centertown.—Farmers' Union Milling Association organized with Watt Taylor president, Warren Lindley vice-president, W. C. Everly secretary-treasurer, W. C. Knott manager; will operate flour, feed and meal mill; has building and machinery. (Recently noted incorporated with \$5000 capital stock.)

Ky., Fulton.—Charley Noonon will build 50-barrel mill; install machinery; also corn-meal machinery; date of opening bids not settled.

N. C., Henderson.—Seaboard Feed & Produce Co., C. V. Singleton, manager, will expend \$5000 to \$6000 to erect building; 60x110 feet; three stories; ordinary construction; architect not selected; corn mill already in-

stalled; will probably install small flour mill, steam plant, 100-horse-power boiler and 80-horse-power engine. (Recently noted.)

N. C., Rockingham.—H. S. Ledbetter is interested in establishment of corn mill. (See "Machinery Wanted.")

N. C., Stony Point.—Pearl Milling Co., capital stock \$5100, incorporated by R. S. Moore, B. F. Hines, N. C. Beckham and others.

FOUNDRY AND MACHINE PLANTS

Ala., Birmingham.—Hay Presses.—Birmingham Tool & Implement Co., capital stock \$25,000, organized with B. S. Webber president, A. J. Gray vice-president, and E. D. H. Spiva secretary-treasurer; will build plant in North Birmingham to manufacture hay presses.

Ala., Demopolis.—Harrows.—Alabama Harrow & Implement Co., capital stock \$25,000, incorporated by A. A. Tibbs, Rane McMillan, O. L. McKinley and others.

Ark., Hope.—Bridges.—Hope Steel Bridge Factory, Taylor H. Allen, president, will, it is reported, establish plant to manufacture steel bridges.

Tenn., Memphis.—Bridge Works.—Virginia Bridge & Iron Co., Roanoke, Va., is reported as to expend \$50,000 for improvements to branch works; writes to Manufacturers Record: "Improvements to consist of extension of crane runways, building roofs over same, additional punching and shearing and riveting equipment; all contracted for, except what will be done in our own works. All structural steel for additional crane runways and roof will be manufactured in our own shops."

Tex., Fort Worth.—Castings, etc.—Utica Brass & Machine Co. (previously noted incorporated with \$5000 capital stock) is installing machinery to manufacture bronze, brass, muntz and copper castings; specialize on working barrels and general machinery repairing; R. L. Carr, president; J. M. Bird, general manager and vice-president; F. L. Lightfoot, secretary.

Tex., Mercedes.—Blacksmith Shop.—E. E. Evans will erect building for blacksmith shop; 25x50 feet; frame; leased by Frank Shannon.

Va., Alexandria.—Turbine Engines, etc.—Emerson Engine Co. advises Manufacturers Record as follows regarding new plant: Property purchased occupies city square facing five docks on Potomac River with depth of 26 feet of water; walls of building erected on stone foundations; two stories; machine shop, 131x115 feet; two dockage buildings, 50x100 feet; steel and fireproof construction; will manufacture 100-horse-power steam turbines in various sizes, engines and motor trucks; will install automatic machines for producing small parts (such as pistons, etc.), boring mills up to 60 inches, machines capable of grinding crankshafts up to 16 inches with throws 8 feet between centers, and traveling crane with 45-foot span. (Lately briefly noted.)

Va., Suffolk.—Peanut Machinery.—National Machine Corporation, capital stock \$10,000, incorporated to manufacture peanut machinery; G. B. Walton, president, Norfolk, Va.; F. B. Bain, vice-president, Wakefield, Va., and J. H. Lilliston, secretary-treasurer, Norfolk.

GAS AND OIL DEVELOPMENTS

La., Morse.—Acadia Oil & Mineral Co., capital stock \$50,000, incorporated; John M. Crabtree, president; Jules S. Mauboules, vice-president; Alphee Le Blanc, secretary-treasurer.

Miss., Port Gibson.—Statewide Oil Co., capital stock \$30,000, organized to develop lands in Claiborne county; G. W. Wheels, president; J. B. Allen, vice-president; J. W. Person, secretary; B. H. Magruder, treasurer.

Okla., Bartlesville.—Irene Oil Co., capital stock \$10,000, incorporated by H. V. Foster, M. F. Stillwell and John H. Breman.

Okla., Chelsea.—Lillian Oil Co., capital stock \$5000, incorporated by L. A. Rowland, A. G. Croninger and Bertha Taylor of Bartlesville, Okla.

Okla., Tulsa.—Englewood Oil & Gas Co., capital stock \$25,000, incorporated by C. A. Sanderson, J. F. Dee and W. P. Slayton.

Okla., Tulsa.—Turner Oil Co., capital stock \$5000, incorporated by A. E. Bradshaw, W. J. Fleisher, C. R. Adams and others.

Okla., Tulsa.—Two States Oil Co., capital stock \$25,000, incorporated by R. J. Rickenbaugh of Tulsa, B. A. Enloe, D. L. Landsen and Benton McMillan of Nashville, Tenn.

Tex., Pecos.—Pecos Valley Oil Co., capital stock \$150,000, incorporated by M. D. Herbert, A. M. Herbert and L. R. Bain.

Tex., Wichita Falls.—Texas-Eastern Oil

Co., capital stock \$15,000, incorporated by Howard A. Forman, Howard V. Thomas, S. C. Reed and others.

Tex., Wichita Falls.—Eastern Oil Co., capital stock \$25,000, incorporated by A. H. Carrigan, Howard A. Forman and Howard V. Thomas.

W. Va., Charleston.—Gardner Oil & Gas Co., capital stock \$35,000, incorporated by Fred Gardner, V. T. Frizzell, M. W. Venable and others.

W. Va., Charleston.—Good Hope Oil & Gas Co., capital stock \$100,000, incorporated by A. B. Martin, O. O. Older, Joe Wehrle and others.

W. Va., London.—London Oil & Gas Co., capital stock \$3000, incorporated by Aubrey L. Romine, Isadore Schwabe, Walter C. Hardy and others.

W. Va., St. Albans.—Mildred Oil Co., capital stock \$100,000, incorporated by C. J. Pearson, Effie Morris Pearson, R. C. Sweet, W. H. Wilson and others.

ICE AND COLD-STORAGE PLANTS

Ark., Imboden.—W. H. Skinner and J. W. Brown purchased Pocahontas Ice & Power Co.'s plant for \$7400 and will remodel.

Ga., Augusta.—Swift & Co., 630 Walker St., will erect building; three stories, including basement; brick; 23,000 feet floor space; contain smokehouse, refrigerating machines, etc.; cost \$9000.

Mo., Kansas City.—Northern Ice Co., capital stock \$10,100, incorporated by Dave McDonnell, H. Blochberger and B. F. Deatherage.

chinery to and blow in furnace at Chattanooga with daily capacity 225 tons iron; develop coal and timber land near Dunlap, Tenn.; rock and limestone quarries at Ironco, Ga., and iron-ore mines at Estelle, Ga.; furnace and mining improvements, including doubling Dunlap capacity, to cost several hundred thousand dollars; contemplates constructing by-product coke ovens costing \$750,000; Dunlap, Ironco and Estelle properties have been operated by Southern Iron & Steel Co., Birmingham, Ala., and arrangements have been completed with that company whereby Chattanooga company will develop them independently; reorganization committee appointed consists of Equitable Trust Co. and its president, Alvin W. Krech, both of New York, and Alexander W. Chambliss of Chattanooga; C. E. Buck, Chattanooga, will be interested and active in management; others interested are DeCamp Bros. & Yule of St. Louis, James D. Lacey of New Orleans and Chicago, and Oakleigh Thorne of New York.

LAND DEVELOPMENTS

Ala., Fort Payne.—Crystal Lake Pecan & Stock Farm Co., 923 Woodward Bldg., Birmingham, Ala., capital stock \$50,000, incorporated; H. Lee Brown, president; J. Sam Martin, vice-president; W. M. Henry, secretary-treasurer; will develop 276 acres of land as fishing resort, pecan orchard, stock and cattle farm; cost of improvements, \$100,000; Wheelock Engineering Co., Birmingham, engineer in charge. (See "Machinery Wanted.")

Ala., Summerdale.—Perdido Development Co., capital stock \$10,000, incorporated to

Terrace will include macadamized roads, beds, sidewalks, gutters and sewer mains on Maryland and Pennsylvania Aves. and Montclair Place and entrances for Pennsylvania Ave. and Jackson Blvd.; improvements at Vinita Park will include rocking of Page Blvd. and Spring Ave. and construction of Hanley Rd.

N. C., New Bern.—Suburban Land Improvement Co., capital stock \$50,000, incorporated by William Dunn, W. C. Willett, E. B. Hackburn and others.

N. C., Washington.—Shepherd's Run Farm, capital stock \$125,000, incorporated by W. L. Marslender, J. J. Marslender, H. S. Ward and Julius D. Grimes.

N. C., Winston (postoffice Winston-Salem). City votes in July on \$15,000 bond issue for parks. Address The Mayor.

Va., Salem.—J. M. Stevens of Minneapolis, Minn. (representing Western syndicate), secured option from W. A. Poff of Glenvar (R. F. D. from Salem) on 180 acres in Roanoke county and will plant orchard; purchase price \$14,000.

W. Va., Charleston.—Boone Land & Bridge Co., capital stock \$5000, incorporated by A. P. Hudson, F. B. Imboden, O. C. Orcutt and others.

LUMBER MANUFACTURING

Ala., Mobile.—Curry Lumber Co., capital stock \$5000, incorporated; E. C. Curry, general manager; H. C. Burton, secretary; W. E. Sinclair, president-treasurer.

Ark., Pine Bluff.—McIntyre-Mann Timber Land Co., capital stock \$325,200, incorporated; J. S. McIntyre, president; David Mann, New Madrid, Mo., vice-president; W. H. Garand, (president State National Bank of Little Rock, Ark.), secretary-treasurer; this and its associate company, Pine Bluff, Sher. & Southern Railway Co., organized to purchase 15,000 acres hardwood timber lands in Grant, Dallas and Cleveland counties, Ark., and construct railroad to transport timber to mills at Pine Bluff; land purchases recently noted made by David Mann and by Fred Mann of Henderson, Ky., the latter a director. (See "Machinery Wanted.")

La., Covington.—D. E. Sheridan of Franklinton, La., is reported as to build sawmill with daily capacity 125,000 feet lumber.

La., Crowley.—John Bethany and Alexander Brown purchased 160 acres timberland on Bayou Mallet; install power drag saw to saw logs into four-foot lengths; will take wood to Crowley and cut into stove lengths by double saw operated by 15-horse-power gasoline engine.

La., Oakdale.—Bowman Hicks Lumber Co., Kansas City, Mo., will build sawmill; Frank Shutts, civil engineer, made surveys.

Miss., Jackson.—South Mississippi Lumber Co., capital stock \$30,000, incorporated by T. J. and L. T. Spraggins of Fenwick, Miss., and others.

Miss., Norfield.—T. R. Hayes, Monticello, Miss., purchased 1,000,000 feet fallen timber.

N. C., Tryon.—Ralph C. Erskine Company, capital stock \$5000, incorporated by Ralph C. Erskine, Henry Bray and Mrs. E. P. Erskine.

Tenn., Welch Station.—Tennessee Timber Co., recently noted incorporated (under Tenn., Crossville), is supplied with equipment needed at present; J. W. Cooper, president; C. E. Keyes, secretary.

Tex., Fort Stockton.—Quinn Lumber Co., capital stock \$15,000, incorporated by A. B. Spencer, C. R. Sherrill and H. N. Quinn.

Tex., Lometa.—Scholten Bros. Cedar Co., capital stock \$125,000, incorporated by H. D. Mispelbloom Boyer, Jr., and D. D. Feirchild, Jr., of San Antonio, Tex.; A. and E. Scholten and S. W. Fisher of Austin, Tex.

Va., Rural Retreat.—Frank E. Highley, Wytheville, Va., will organize company to develop 14,000 acres timber lands; proposes to build 15-mile standard-gauge railroad from Wytheville to timber.

METAL-WORKING PLANTS

Okla., Enid.—Tanks and Silos.—Enid Metal Manufacturing Co. will manufacture steel tanks and silos; W. W. Coates, president; E. E. Newman, vice-president; G. E. Holdridge, secretary, treasurer and manager. (Recently noted incorporated with \$25,000 capital stock and to have purchased plant and equipment.)

MINING

Ky., Lawrenceburg.—Limestone.—Kentucky River Stone & Sand Co., T. B. Ripy, manager, will develop blue limestone quarries on Kentucky River; daily capacity 200 tons limestone rock for concrete ballast, etc.; contemplates installation of sand and gravel equipment; also machinery to manufacture limestone dust. (See "Machinery Wanted.")

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N. C., Wilmington.—Independent Ice Co., J. A. Springer, president, is having plans prepared by J. F. Leitner, Wilmington, for cold-storage plant; four stories; 90x100 feet; fireproof; reinforced concrete construction. (Recently noted.)

N. C., Wilmington.—Dixie Brokerage Co., Grand Theater Bldg., is interested in promoting cold-storage plant; capital \$100,000.

Tex., Athens.—Citizens Ice Co. awarded contract to C. H. Hawn to erect ice plant; ironclad; cost \$4000; machinery contract let; daily capacity, 25 tons of ice; C. H. Coleman, president; C. R. Johnson, vice-president; W. F. Carroll, secretary-treasurer. (Recently noted incorporated with \$30,000 capital stock.)

IRON AND STEEL PLANTS

Ala., Birmingham.—Iron Furnace, etc.—Woodward Iron Co. has, it is reported, awarded contract to Variety Iron Works, Cleveland, O., to construct furnace with daily capacity 400 tons iron, costing \$350,000; will demolish smallest furnace to furnish site for new one; also reported to have awarded contract to H. Koppers Company, Joliet, Ill., to construct 40 by-product coke ovens of 15½ tons capacity each in 15 hours; ovens and other accompanying improvements and construction with new furnace to cost \$1,000,000. (Company's merger with Birmingham Coal & Iron Co. and plans for \$2,000,000 improvements recently detailed.)

Tenn., Chattanooga.—Iron Furnace, Coal and Iron Mine, etc.—Chattanooga Iron & Coal Co. will reorganize and resume development of its various properties; add new ma-

grow tobacco; Theodore Kloch, president; H. F. Peters, vice-president; George H. Horneacker, treasurer; William R. Bul'ion, secretary.

Ark., Argenta.—Mt. Melo Orchard Co., capital stock \$25,000, incorporated; owns 300 acres about 20 miles from Argenta, in Faulkner county; 65 acres planted in fruit; plans ultimately to devote entire 300 acres to fruit cultivation; Fred Schneider, president; Jas. Gerlach, vice-president; Oscar Wilhelm, secretary-treasurer.

Ark., Patterson.—Holly Land Co., capital stock \$45,000, incorporated by C. A. Kiesler, J. H. Kiesler and R. C. Williams.

Fla., Lakeland.—Thos. L. Waring is interested in proposed suburban development.

Fla., Ocala.—Florida Orange & Grape Fruit Co., capital stock \$300,000, incorporated by D. G. Haley, C. J. Phillips and T. G. Mixon.

Ga., Savannah.—Mendel Real Estate & Investment Co. acquired 22 acres in suburbs and will establish residential section; will divide into about 200 lots, pave sidewalks with asphalt, etc.

Md., Windsor Hills (postoffice at Baltimore).—North Avenue Land Co., Windsor Hills, will improve entire Windsor Hills tract of 101 acres; will construct avenue from Windsor Mill Rd. to Forest Ave., to include part of Montgomery Ave., Lawina, Dorchester and Forest Glen Rds.; secured \$85,000 loan.

Mo., St. Louis.—Davis Realty Development Co. increased capital stock from \$50,000 to \$500,000, and will further develop suburban properties, including Maryland Terrace and Vinita Park; improvements at Maryland

Mo., Joplin.—O. W. Sparks will install concentrating plant for Yellow Jacket mine at Badger.

Mo., Joplin.—Lead and Zinc.—Onandaga Mining Co., capital stock \$100,000, incorporated by J. A. Rogers, J. G. Marcum, G. L. Wells and others.

Mo., Thoms Station (not a postoffice).—Mary E. Mining Co. (C. H. Judy, T. C. Hentritz, William Hood and others of Carterville, Mo.) will build concentrating plant on lease at Thoms Station.

N. C., Kinsey—Minerals.—Alba Mineral Co. increased capital stock from \$10,000 to \$100,000.

Okl., Bromide.—Bromide Mining & Milling Co. (recently noted incorporated with \$10,000 capital stock) will develop 100 acres of mining property; daily output not determined; engineer not engaged; R. F. Bingman, president; C. F. Fortune, vice-president; Earl N. Swan, secretary-treasurer; F. C. Woodworth, manager. (See "Machinery Wanted.")

Va., Staunton—Pyrites.—Virginia Ore Co., Chas. Catlett, president (recently noted incorporated with \$50,000 capital stock), was formed primarily to deal in pyrite residue (or clinder) from sulphuric-acid plants; may concentrate and nodulize same.

MISCELLANEOUS CONSTRUCTION

Ark., Little Rock—Levee.—Penitentiary Board and Linwood-Auburn Levee District Board have agreed upon construction of levee on State Farm; levee board will build 3000 feet temporary levee and build revetment along bank at danger point; Penitentiary Board will donate land.

Fla., Tallahassee—Locks and Dams.—Board of Drainage Commissioners of State of Florida will construct three concrete locks and dams in drainage canals near south shore of Lake Okeechobee; bids received until May 22; J. O. Wright, chief drainage engineer; J. C. Luning, secretary. (See "Machinery Wanted.")

Fla., Tampa—Docks.—City contemplates voting June 4 on probably \$100,000 bond issue for docks. D. B. McKay, chairman Commissioners of Public Works

La., Shreveport—Levee.—Caddo Levee Board awarded contract to Cameron, White & Co., Baton Rouge, La., at \$102,600 to build about 500,000 cubic yards of levee. (Call for bids lately noted.)

La., Mooringsport—Dam.—Government awarded contract to H. B. Thompson Company, Kansas City, Mo., to construct reinforced concrete dam at foot of Caddo Lake; \$100,000 appropriated.

La., New Orleans—Wharf.—J. F. Coleman, consulting engineer, submitted three plans to Board of Port Commissioners, A. C. Bell, chief engineer, for 1500-foot wharf to be added to Dunsmuir Landing; first plan calls for remodeling and rebuilding wharf estimated to cost \$368,034; second and third plans are for entire new wharf and shed, estimated to cost \$425,350 and \$486,400. (Recently mentioned.)

Mo., Kansas City.—Major Edward H. Schulz, Government engineer, will award contracts during spring, aggregating \$400,000, for improving Missouri River between Kansas City and St. Louis; J. W. McMurray Construction Co. of Kansas City has contract at \$141,050 to construct 13,000 feet of revetment at Waverly, Mo., 19 miles from Kansas City; another contract (recently mentioned) will be awarded May 4 for 14,000 feet of revetment at Providence Bend, estimated to cost \$126,000; last bids, to be invited until May 22, will be for 12,000 feet of revetment along left bank of river, three miles from Missouri City, Mo., estimated to cost \$108,000; Congress appropriated \$600,000.

S. C., Charleston—Steamship Terminals.—Clyde Steamship Co., Pier 36, North River, New York, writes to Manufacturers Record: "Have not determined final plans for construction of proposed terminals; preliminary details are only in process, and it is too early to make statement for publication outlining proposed improvements." (Previously mentioned as planning piers, etc.)

Tex., Brownsville—Canal.—L. A. Whitney, secretary Chamber of Commerce, states survey will be made for proposed deep-water canal from Brownsville to Gulf; channel plans to be formed after route is decided on; probable cost of examination and survey \$109,000, amount of incorporation. (Recently noted.)

Va., Hampton—Piers.—City will construct two piers in Hampton Creek; each 60 feet long and 10 feet wide; creosote and fender piles; wharf, 30 feet square. Address The Mayor.

Va., Lambert's Point—Coal Pier.—N. D. Maher, second vice-president and general manager Norfolk & Western Railway Co., Roanoke, Va., advises contract has been let

to Henry Steers, Inc., New York, for breakwater, dredging, bulkhead and substructure for coal pier previously noted; work to be completed in about nine months; additional contracts to be awarded within few days; pier to be 1200 feet long, with six berths, three on each side, and two car dumpers on ground; steel superstructure; pier's contemplated annual capacity 6,000,000 tons; cost about \$1,500,000.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham—Grain Elevator.—William M. Cosby will erect grain elevator; reinforced steel and concrete; 40x55 feet; 85 feet high; storage capacity 100,000 bushels; 21 bins; belt conveyors and scales; electric power; capacity 24 cars grain per day; cost \$30,000; plans by H. D. Breeding of Birmingham.

Fla., Miami—Incinerator.—City will build incinerator to cost \$2500. Address The Mayor.

Ga., Jonesboro—Publishing.—Jonesboro Enterprise will rebuild burned plant.

Ga., La Grange—Laundry.—Reaves & Doughty, Greenville, Tenn., will erect laundry; operated by electricity; cost \$12,000.

La., Bogalusa—Creosoting.—Colonial Creosoting Co., capital stock \$100,000, incorporated by A. T. Hert, Arthur E. Hopkins and Robert H. Moore, all of Louisville, Ky.; will build creosoting plant at Bogalusa; subsidiary to American Creosoting Co. and Federal Creosoting Co.; former has its general offices at 114 Liberty St., New York.

La., Lake Charles—Drainage Contracting.—Fenwick Excavator Co., capital stock \$50,000, incorporated by John Bertrand Watson, Hetty Fenwick, Elizabeth Belt and others; will reclaim swamp lands, especially 10,000 acres in Cameron parish owned by Alluvial Land Co. of Lake Arthur, La.

La., Vinton—Printing.—Vinton Printing Co., capital stock \$3000, incorporated; W. F. Brooks, president; T. N. Baker and Frank H. Ganker, vice-presidents; Roy B. Hall, secretary; A. J. Kiplinger, treasurer.

Mo., Craig—Elevator.—Farmers' Elevator Co., capital stock \$10,000, incorporated by Roger McCoy, S. M. Randall, E. R. Melton and others.

N. C., Asheville—Dry Cleaning.—Asheville Dry Cleaning Co., capital stock \$10,000, incorporated by E. S. Paine, M. S. Paine and O. E. Hanson.

Okl., Oklahoma City—Contracting.—Railway Construction Co., capital stock \$5000, incorporated by Carlos Combs, L. Langford and E. L. Cole.

Okl., Oklahoma City—Construction.—Engineering Construction Co., capital stock \$25,000, incorporated by W. E. Smith, C. M. Smith and B. Darling.

Okl., Pawnee—Publishing.—Insignis-Correlating Publishing Co., capital stock \$5000, incorporated by C. L. Berry, E. M. Clark, G. H. Phillips and others.

S. C., Sumter—Contracting.—Carr Construction Co., capital stock \$5000, incorporated by I. A. Byttenberg and W. F. Carr.

Tenn., Nashville—Printing.—Organ Printing Co., capital stock \$5000, incorporated by Oscar Mather, R. E. Organ, E. F. Baird and others.

Tex., Dallas—Glass.—Federal Plate Glass Co., Ottawa, Ill., will establish plate glass distributing plant; will occupy, as tenants, three-story brick building 50x200 feet, cost \$70,000, now being erected.

Tex., Galveston—Electrical Construction.—Texas Electric Construction Co., capital stock \$1000, incorporated by B. G. Hamlett, F. A. Wolters and W. D. Baggett.

Tex., Houston—Construction.—Texas United Construction Co., capital stock \$10,000, incorporated by G. S. Cryder, W. H. Gemmer and G. S. Dowell.

Va., Alexandria—Concrete Construction.—Poured House Construction Co., capital stock \$30,000, incorporated; William T. Chantland, president, Virginia Highlands, Va.; C. C. Leadbetter, treasurer, Alexandria, Va.; L. C. Spangler, vice-president, Virginia Highlands, Va.; Henry Eric, secretary, Washington, D. C.; I. Tepper, manager; will contract to build fireproof concrete structures; main office, 920 New York Ave., Washington, D. C. (See "Machinery Wanted.")

Va., Norfolk—Ferry.—Chesapeake Ferry Co., capital stock \$100,000, incorporated by R. E. Jordan, J. H. Rodgers, W. G. Davis and others.

Va., Roanoke—Contracting.—Virginia Contracting Co., capital stock \$30,000, incorporated; H. M. Luck, president; H. G. Douglas, secretary; R. S. Sale, treasurer.

W. Va., Green Spring—Tie Creosoting.—Baltimore & Ohio Railroad, F. L. Steuart, chief engineer, Baltimore, Md., will estab-

lish tie-creosoting plant; equipment will comprise two treating cylinders, each 7 feet in diameter and 132 feet high, to have maximum annual capacity of 1,000,000 ties; two 150-horse-power boilers; creosote storage tank, 40x30 feet; two working tanks, 24x20 feet, and other small tanks; plant, including storage yards for seasoning timber, covers 60 acres. (Recently mentioned.)

MISCELLANEOUS FACTORIES

Ala., Bay Minette—Turpentine, etc.—Newport Turpentine & Rosin Co. incorporated with \$100,000 capital stock; president, Henry J. Schlesinger; vice-president, Armin A. Schlesinger; secretary, Wilmet Saeger.

Ala., Corey—Sulphuric Acid.—Steel City Chemical Co., capital stock \$150,000, incorporated; Culpepper Exum, Birmingham, Ala., president; S. D. Crenshaw, Richmond, Va., vice-president; S. N. Gore, Birmingham, secretary; constructing plant to manufacture sulphuric acid; cost \$250,000; in operation by June 1; annual capacity, 25,000 to 30,000 tons. (Plant previously described and building contract noted awarded to Ager & Clime of Birmingham.)

Ala., Gadsden—Gas.—Tri-City Gas Co. will extend gas mains five miles; contemplates extension to Attalla, Ala., passing through Alabama City.

Ala., New Decatur—Tannery.—American Oak Tanning Co. will rebuild tannery previously reported burned.

D. C., Washington—Aeroplanes, etc.—Christmas Aeroplane Co., capital stock \$1,000,000, incorporated by William W. Christmas, 725 12th St. N. W., and others; will erect three-story factory building and manufacture aeroplanes.

Ga., Cartersville—Gas.—City votes May 25 on \$32,000 bond issue to extend gas plant. Address The Mayor. (See "Schools.")

Ga., Macon—Drugs.—Dixie Winner Co., capital stock \$3000, incorporated by D. L. Brown, G. F. Gililand, Sr., and G. F. Gililand, Jr.

Ky., Dawson Springs—Bottling.—Dawson Salts & Water Co., W. G. Hamby, president, will operate bottling plant; building nearing completion. (Recently noted incorporated with \$15,000 capital stock.)

La., Abbeville—Sugar.—People's Sugar Co., capital stock \$100,000, organized by V. L. Caldwell and O. A. Broussard of Abbeville, J. C. Le Bourgeois of New Orleans, La., and others; reported to acquire properties and sugar factory of Rose Hill Sugar Co.

La., New Orleans—Petroleum.—Union Petroleum Co., Philadelphia, Pa., reported to have purchased 12 acres on which to build plant, export storage tanks, pump-house, etc.; M. F. Ryan to be local manager.

Md., Baltimore—Propellers.—American Propeller Co. (Spencer Heath, 616 G St. N. W., Washington, D. C., interested) will establish plant to manufacture propellers for aeroplanes; leased building 243-249 Hamburg St.; will install woodworking machinery. (See "Machinery Wanted.")

Md., Baltimore—Vinegar.—Baltimore Manufacturing Co. will have plans prepared by John E. Laferty, 11 Pleasant St., Baltimore, for additional buildings to vinegar plants at Monument and Buren Sts. and at Bank St. and Central Ave.; each structure of brick, probably two stories, and fireproof. (Recently mentioned.)

Md., Baltimore—Bakery.—Wernig & Fischer, capital stock \$1000, incorporated by Clarence E. Wernig (2436 Ashland Ave.), William A. Fischer and Mark Wells.

Md., Baltimore—Rubber stamps, etc.—J. W. (not F. W. as recently stated) Dorman Co., 526 N. Calvert St., awarded contract to John J. Moylan, 117 E. Center St., Baltimore, to erect addition to plant; 20x40 feet; cost of machinery, \$3000.

Mo., Jackson.—London Manufacturing Co., capital stock \$30,000, incorporated by Jacob A. Berry, Emma C. Berry, R. J. London and others.

Mo., Joplin.—Duncan Concentrator & Manufacturing Co., capital stock \$30,000, incorporated by O. W. Duncan, Walter Thomas, Allan P. Miller and others.

Mo., Kansas City—Aeroplanes.—Mars Aviation Co., 506 Gumbel Bldg., will erect building; 100x75 feet; cost \$1500; bids opened May 1; machinery will include stamping machines, lathes, band saw, etc.; bids opened April 25; capacity two aeroplanes weekly; J. C. Mars, president and manager; G. H. G. Smythe, vice-president; Marie Mars, secretary-treasurer. (See "Machinery Wanted.")

Mo., Kansas City—Aeroplanes.—Kyle-Smith Aeroplane Co., capital stock \$5000, incorporated by Kyle Smith, Minnie S. Williams and Price L. Williams.

Mo., St. Louis—Tailoring.—White & Cra-

mer Ladies' Tailoring Co. incorporated by Jacob White (4407 Olive St.), H. Cramer & Co. (3921 Olive St.) and others; will consolidate plants at 4517 and 4519 Olive St.; erect building; two stories; 50x207 feet; cost \$50,000.

Mo., St. Louis.—Kretzer Realty Co. will build factory at 2135 De Kalb St.; cost \$5000.

Mo., St. Louis—Hydraulic Cartridges.—American Hydro-Blast Co. will incorporate, with \$100,000 capital stock, to manufacture hydraulic cartridges for coal mine use; plans yet indefinite; E. J. Wallace, 609 Wright Bldg., secretary pro tem.

Mo., St. Louis—Sample and Suitcases.—Union Sample Case Co., capital stock \$10,000, incorporated by Louis C. and August H. Toennies, Paul Schikore, Edgar E. Meyer and others.

N. C., Elizabeth City—Gas.—North Carolina Gas Co., Raleigh, N. C., purchased one acre on which to build gas plant estimated to cost \$40,000.

N. C., Hewitts—Lime.—F. R. Hewitt will install plant with daily capacity 20 tons lime; lime from marble; plant's capacity may be doubled.

N. C., High Point—Glass.—High Point Glass & Decorative Co., capital stock \$10,000, incorporated by A. K. Klemme, Charles Hoerl, L. H. Davis and others.

Okl., Oklahoma City—Polish.—Davis-Fuller Manufacturing Co. organized by H. O. Davis of Oklahoma City and J. R. Fuller, Kansas City, Mo.; will establish plant at 111 Broadway to manufacture polish for all-ware.

Okl., Vinita—Refinery.—Vinita Producing & Refining Co. wires Manufacturers Record as follows concerning plant reported burned: "Machinery and buildings not injured; lost half our tanks; immediately replace; part of steel now on ground; refining of oil resumed in 10 days."

S. C., Lake City—Tobacco.—Imperial Tobacco Co., American main office Richmond, Va., awarded contract to Briggs & Killeit, Wilson, N. C., to erect building recently described; plans by C. C. Davis, company's chief engineer.

S. C., Spartanburg—Bottling.—Gay-Ola Bottling Co., capital stock \$15,000, incorporated; Fred O. Harrell, president; E. D. Harrell, vice-president; W. E. Harrell, secretary-treasurer.

Tenn., Knoxville.—Fulton Construction Co. will erect addition to plant on 2d St.; two stories; brick; cost \$3500.

Tenn., Nashville—Gas.—United Gas Improvement Co. and C. H. Geist Company of Philadelphia, Pa., purchased Nashville Gas Co.; will issue bonds for \$2,000,000; plant's annual output is 300,000,000 cubic feet gas.

Tex., Beaumont—Rice.—Causeway Rice Co., Houston, Tex., contemplates building plant to manufacture rice products.

Tex., Corsicana.—Weller Manufacturing Co., capital stock, \$20,000, incorporated by J. A. Thompson, J. L. Weller and L. Treadwell.

Tex., Dallas—Paint.—Lacquer-All Manufacturing Co. (recently noted incorporated with \$100,000 capital stock) will establish factory to manufacture lacquers and lacquer paints; probably rent building for year; install machinery to cost about \$20,000; E. S. Marshall, president; S. W. Summers, vice-president; R. R. Gilbert, treasurer; machinery proposals to be addressed to Weeden Green, secretary, Box 1091. (See "Machinery Wanted.")

Tex., Denton—Gas.—City Council granted gas franchise to E. R. Brown and L. B. Denning.

Tex., Greenville—Granitoid.—Greenville Granitoid Co., capital stock \$5000, incorporated by L. W. Harkey, T. P. Bethel and N. E. Peak; will build plant to manufacture granitoid.

Tex., Houston—Roofing.—Peden Roofing Co., capital stock \$5000, incorporated by D. D. Peden, Jr., John A. Herrin and Charles B. Golding.

Tex., Kingsville—Creamery.—Kingsville Co-operative Creamery Co. organized with \$3000 capital stock; W. H. McCracken, president; S. E. Gibson, secretary.

Tex., San Antonio—Brewery.—Lone Star Brewing Co. increased capital stock from \$500,000 to \$825,000.

Va., Alexandria—Automobile Starter.—American Pneumatic Starter Co., capital stock \$150,000, incorporated; C. A. Douglas, president; G. L. Baker, vice-president (both of Douglas & Baker, 811-813 Colorado Bldg.); A. E. L. Leckie, secretary-treasurer—all of Washington, D. C.

Va., Richmond—Lime Grinding.—Lime Board (William Hodges Mann, Governor, Major James B. Wood, superintendent of

penitentiary, and Mr. Kolner, commissioner of agriculture) will arrange to build two plants, one for grinding lime rock and one for grinding oyster shells.

W. Va., Charleston—Lamp and Carbon Black, etc.—Monarch Carbon Co., capital stock \$100,000, incorporated by John W. Moore, J. N. Pribble, M. R. Matthews and others.

W. Va., New Martinsville—Beverages.—Ferrell & Twyman awarded contract to Dayton & Francis of New Martinsville to erect building to be equipped for manufacturing beverages; 18x38-foot \$1000 structure.

W. Va., Wheeling—Tubes.—Capless Tube Co. incorporated by Henry M. Russell, Jr., Gibson, L. Caldwell, J. H. Brennan and others.

Va., Staunton—Lime-sulphur.—W. M. McCray is interested in proposed establishment of plant to manufacture lime and sulphur solution. (See "Machinery Wanted.")

MOTORS AND GARAGES

Ark., Malvern—Trucks.—Panama Manufacturing Co., S. F. Sherman, president, 635 McCullie Ave., Chattanooga, Tenn., will manufacture motor trucks. (See "Wood-working Plants.")

Ga., Atlanta—Garage.—W. L. Peel will erect garage at Peachtree St. and Merritts Ave.; cost \$40,000 to \$50,000.

Ga., Cedartown—Garage.—Cedartown Garage & Tin Co. incorporated with \$1600 capital stock by I. T. Mee and W. R. Biggers.

Ga., Savannah—Automobile Repairs.—Savannah Auto Repair Co. incorporated with \$10,000 capital stock by William T. De Borde, D. D. Pounder and Shelby Myrick.

Mo., St. Louis—Garage.—Delko Garage Co. incorporated with \$2000 capital stock by C. H. Smith, Jr., O. K. Huthing and Samuel Broadbent.

Tenn., Knoxville—Garage.—C. B. Atkin is reported as to erect garage. (See "Stores.")

Tex., Beaumont—Motors.—Queen City Motor Co. increased capital stock from \$5000 to \$9000.

ROAD AND STREET WORK

Ala., Athens.—City will build concrete sidewalks. Address The Mayor.

Ala., Carrollton.—Pickens county will grade and surface with sand-clay four miles of road; bids received until May 22; T. D. Kemp, engineer in charge; W. S. Keller, State Highway Engineer, Montgomery, Ala. (See "Machinery Wanted.")

Ala., Cullman.—City will construct cement sidewalks; cost \$15,000. Address The Mayor.

Ala., Decatur.—City is considering building macadam street to connect with Decatur and Moulton turnpike. Address The Mayor.

Ala., Roanoke.—Randolph county will expend \$10,000 to construct nine miles sand-clay roads; bids received May 4; W. S. Keller, State Highway Engineer, Montgomery, Ala. (See "Machinery Wanted.")

Ala., Selma.—Dallas county will vote on bond issue of from \$100,000 to \$150,000 to construct roads. Address County Commissioners.

Fla., Tampa.—Mutual Realty & Investment Co., W. B. Gray, president, awarded contract to B. F. Waters to construct two miles of shell paving, 15 feet wide; amount available, \$10,000; Benjamin Thompson, engineer in charge. (Recently noted.)

Fla., Tampa.—City will construct sheet cement sidewalks; bids received until May 7; D. B. McKay, chairman Commissioners of Public Works. (See "Machinery Wanted.")

Fla., Tampa.—City contemplates voting June 4 on \$1,500,000 bond issue for internal improvements; of this amount, \$700,000 will be expended for street paving; \$500,000 for sewer system according to plans by Alexander Twombly, engineer, New York; probably \$100,000 for docks and \$200,000 for city hall. D. B. McKay, chairman Commissioners of Public Works.

Ga., Milledgeville.—City will macadamize portion of business section and pave sidewalks on Jefferson St. Address The Mayor.

Ga., Stone Mountain.—Town contemplates paving streets. Address Town Clerk.

Ky., Elkton.—Todd county contemplates voting on \$300,000 bond issue for road construction. Address County Commissioners.

Ky., Somerset.—City Council appropriated \$5500 to macadamize and improve streets. Address The Mayor.

Ky., Tompkinsville.—Monroe County Commissioners awarded contract to P. Keating, Shelbyville, Ky., at \$2200 per mile to build road from Tompkinsville to Olla, on Cumberland River, eight miles.

La., Lake Charles.—City will pave Hodgson St. from Railroad Ave. to Miller St., asphalt, width 28 feet; Kirby St. from Ryan St. to

Louisiana Ave., wood block, width 34 feet; Ryan St. from Belden to Railroad Ave., bituminous with wood block between street-railway tracks, width 44 feet; S. O. Shattuck, City Clerk. (Recently mentioned.)

Md., Baltimore.—Paving Commission awarded contract No. 19 to Consolidated Engineering Co., Emerson Tower Bldg., Baltimore, at \$2412 for vitrified-block pavement; Charles A. Edel, secretary of Paving Commission.

Md., Baltimore.—City will grade, curb and pave following streets: Contract No. 3, Belle Ave., 4300 square yards, bituminous concrete. Contract No. 4, Denison and Allendale Sts. and Windsor and Elgin Aves., 8120 square yards, sheet asphalt. Contract No. 5, Garrison La. and Pratt and Catherine Sts., 8200 square yards, vitrified block; bids received until May 8; Eugene E. Grannan, president Commissioners for Opening Streets. (See "Machinery Wanted.")

Md., Rockville.—Montgomery County Commissioners are arranging to build roads authorized by Legislature; issue \$47,000 of bonds to construct road from Rockville to Travilah, Rockville to Potomac line on Falls Rd., Georgetown pike through Garrett Park to Kensington, and Forest Glen to Brookeville pike.

Md., Roland Park.—Roland Park Co. will grade 4.5 miles of streets, several acres of lots, together with clearing and stripping of top soil; about 250,000 cubic yards excavation; bids received until May 6. (See "Machinery Wanted.")

Md., Pocomoke City.—City voted \$35,000 bond issue to macadamize streets; property-owners will contribute equal amount; probably use broken stone or brick and some asphalt; date of opening bids not set; J. T. Costen, Mayor.

Miss., Tupelo.—City contemplates issuing \$50,000 of bonds for street paving. Address The Mayor.

Mo., Carthage.—City awarded contract to R. J. and W. M. Boyd Company, Kansas City, Kans., at \$4550 to pave Main St. from 2d to 5th St.; at \$7262.50 to pave 3d St. from Maple to Howard St., and at \$5582.50 to pave Grant St. from 2d to 5th St.; bids for paving 4th St. from Lyon to Howard St., estimated to cost \$468.75, will be opened in early part of May.

Mo., Fulton.—Fulton Special Road District, R. L. Smith, chairman of commission, will let contract June 1 for 120,000 cubic yards earth excavation; profiles and specifications will be ready on May 16; W. R. Heagler, chief engineer; bond issue of \$100,000 previously noted voted for road improvements. (See "Machinery Wanted.")

Mo., Lebanon.—Road District No. 1 of Laclede county voted \$50,000 bond issue to construct roads. Address Commissioners Road District No. 1. (Recently mentioned.)

Mo., St. Louis.—Board of Public Improvements approved ordinances for sidewalk improvements estimated to cost \$46,417; will receive bids until May 17 for brick paving estimated to cost \$156,372; asphalt, \$41,576; bituminous, \$38,091; wood, \$64,392.

N. C., Winston, P. O. Winston-Salem.—City votes in July on \$100,000 bond issue for street paving. Address The Mayor. (Amount increased from \$75,000 as recently stated.)

S. C., Columbia.—Richland county will resurface with artificially-bonded macadam road from city limits to Hyatt Park, 7648 feet, width 25 feet; bids received until May 17; W. F. Muller, Supervisor Richland county. (See "Machinery Wanted.")

Tenn., Chattanooga.—City will pave with vitrified brick Fort St. from 11th to 13th St. (District No. 113); bids received until May 6; A. N. Sloan, Commissioner Department of Streets and Sewers. (See "Machinery Wanted.")

Tenn., Chattanooga.—Hamilton county will improve Glass St., East Chattanooga, from Harrison Pike to Campbell St.; bituminous macadam, bituminous concrete or vitrified brick roadway; concrete curb and gutter; bids opened April 30; E. D. Bass, chairman Hamilton County Road Commission. (See "Machinery Wanted.")

Tenn., Loudon.—Loudon county awarded contract to J. P. McTye & Son, Knoxville, Tenn., to build roads costing \$100,000; proposes to grade 50 miles and macadamize 10 miles, rock portion being on Memphis-to-Bristol highway.

Tenn., Madisonville.—Monroe County Commissioners awarded contract to R. L. Peters, Knoxville, Tenn., at \$276,180 to grade 160 miles of roads and build required bridges; work will be provided for out of \$300,000 bond issue. (Call for bids lately noted.)

Tenn., Morristown.—Hamblen county voted \$25,000 bond issue to repair and rebuild macadam roads. Address County Commissioners. (Recently mentioned.)

Tenn., Nashville.—City will construct granite curbing and sidewalks in front of or adjacent to lots on Pierce, Linden and Twenty-third Aves., Elliston Pl. and Cedar St., where owners have not complied with legal notices; Board of Public Works received bids until May 2; William W. Southgate, City Engineer.

Tex., Dallas.—City will pave intersection of Pacific Ave. and Harwood St.; bids received until May 6; J. B. Winslett, City Secretary. (See "Machinery Wanted.")

Tex., Galveston.—United States Engineer Office, Earl I. Brown, Major Engineers. Proposals received until noon May 31 for constructing concrete sidewalks, brick pavement, concrete curbing and drains at Fort Travis Reservation, Port Bolivar; information on application. (See "Machinery Wanted.")

Tex., Greenville.—Hunt county votes May 25 on \$400,000 bond issue to construct macadam roads. Address County Commissioners.

Tex., Hillsboro.—City contemplates \$75,000 bond issue for compressed concrete pavement. Address The Mayor.

Tex., Kaufman.—City will construct concrete walks; awarded contract. Address The Mayor.

Tex., Kerrville.—City voted \$20,000 bond issue to grade, gravel and repair streets and sidewalks. Address The Mayor. (Recently mentioned.)

Tex., Lufkin.—Angelina county defeated \$200,000 bond issue for road construction in Precinct No. 1. Address County Commissioners. (Recently mentioned.)

Tex., Marlin.—City receives bids until May 1 to pave Railroad and Winter Sts. Address The Mayor. (Recently mentioned.)

Tex., Waxahatchie.—Ellis county votes May 11 on \$75,000 bond issue for road construction. Address County Commissioners.

Va., Abingdon.—Washington county will construct stone road from Bristol to Abingdon, 15 miles, to be portion of proposed Bristol-to-Washington highway. Address County Commissioners.

Va., Boydton.—Mecklenburg county will construct 15.6 miles macadam road and 79 miles gray soil road in La Crosse, South Hill, Palmer's Spring and Boydton districts; bids received until May 7; P. St. J. Wilson, State Highway Commissioner, Richmond, Va. (See "Machinery Wanted.")

Va., Graham.—Town voted \$50,000 bond issue to improve streets, etc. Address Town Clerk. (See "Water-works.")

Va., Norfolk.—Norfolk County Water Co. awarded contract to R. P. Denby of Norfolk at \$12,000 to raise two miles of Gum Swamp Rd. in Princess Anne county. This is in connection with construction of dam in Gum Swamp to secure new water source.

Va., Richmond.—City awarded contract to W. F. Bowe for cement sidewalks and curbing; Charles E. Bolling, City Engineer.

Va., Richmond.—City will construct granite curbs and gutters, granite sidewalks and brick sidewalks, granite spall paving, granite curbing, asphalt block paving, sewers, etc.; bids received until April 29; Charles E. Bolling, City Engineer.

Va., Staunton.—Augusta county defeated \$100,000 bond issue to construct 300 miles of macadam roads. Address County Commissioners. (Recently mentioned.)

W. Va., Wheeling.—City awarded contract to Coss & Meyer of Wheeling at \$15,340.32 to pave McCulloch St. from Baker to 12th St.; concrete base; brick paving.

SEWER CONSTRUCTION

Ala., Athens.—City votes May 27 on bond issue to extend sewer system. Address The Mayor.

Ala., Jasper.—City voted on \$13,000 bond issue for improvements to sewers; bids opened soon; engineer not employed. R. T. Knight, Mayor.

Fla., Apalachicola.—City votes May 14 on bond issue of \$12,262.63 to extend and complete storm drainage and sewer system; William D. Buzzett, City Clerk.

Fla., Fort Meade.—W. E. Arthur, secretary Bond Trustees, states city's plans for water system will probably not take definite shape before 60 days; R. C. McClellan, Mayor. (Bond issue of \$20,000 recently noted voted.)

Fla., Tampa.—City contemplates voting June 4 on \$500,000 bond issue for sewer system. D. B. McKay, chairman Commissioners of Public Works. (See "Road and Street Work.")

Ga., Decatur.—City voted \$5000 bond issue to extend sewer system. Address The Mayor.

Ga., Macon.—City will construct six miles

of 8, 10 and 12-inch sanitary sewers, with all manholes and flush tanks; bids opened May 28; J. J. Gaillard, City Engineer; Bridges Smith, clerk. (See "Machinery Wanted.")

Ga., Stone Mountain.—Town contemplates construction of sewer system. Address Town Clerk.

Ky., Henderson.—City awarded contract to Ed. Manion to build 9000 feet of sewer to divert flow from Canoe Creek into Ohio River; cost \$3000.

Md., Baltimore.—City will construct section No. 3 of high level interceptor, contract No. 89; Board of Awards receives bids until May 15; Charles England, chairman Sewerage Commission, American Bldg. (See "Machinery Wanted.")

N. C., Dunn.—City contemplates \$50,000 bond issue for sewer system. Address The Mayor.

N. C., Winston, P. O. Winston-Salem.—City votes in July on \$85,000 bond issue to extend sewer system. Address The Mayor. (Recently mentioned.)

Tex., Terrell.—City voted \$6000 bond issue for sewerage system at public schools, etc. Address The Mayor. (See "Schools.")

Va., Richmond.—City awarded contract to A. J. Twigg & Sons at \$18,524 to construct brick sewer on Central Ave., and to T. G. Brittingham to construct small terra-cotta sewers; latter calls for all sewers ranging from 12 to 24 inches; Charles E. Bolling, City Engineer.

TELEPHONE SYSTEMS

Miss., Jackson.—Cumberland Telephone & Telegraph Co., Nashville, Tenn., contemplates extending conduit system; cost about \$10,000.

S. C., Bethune.—Bethune Telephone Co., capital stock \$1000, incorporated; H. H. Holder, president; C. O. Terry, vice-president; J. A. Stone, secretary; H. W. Northcutt, treasurer.

S. C., Pages Mills.—Hayes & Lester Telephone Co. incorporated by W. E. Lester of Pages Mills and Charles P. Hayes of Kemper, S. C.

S. C., Sumter.—Bell Telephone Co. has plans by Wheeler & Stern, Charlotte, N. C., for telephone central station; ordinary construction; hot-water heat; gas and electric lighting; cement sidewalks; tin and tile roof; cost \$12,000.

Tex., Clarksville.—Texarkana Telephone Co., Arlie C. Stewart, manager, Texarkana, Tex., will remodel telephone system; cost \$8000 to \$10,000.

Tex., George's Creek.—Citizens' Telephone Co., capital stock \$2400, incorporated by T. A. Duncan, R. D. Ratliff and W. T. Howeth.

Tex., Shelbyville.—Citizens' Rural Telephone Co., capital stock \$11,600, incorporated by W. M. Beck, J. H. Wind and G. C. Meyers.

W. Va., Ceredo.—Millcreek Telephone Co. (Wm. Ferguson and others) will, when recently-noted franchise is secured, build 3½ additional miles telephone line; has 8 miles. (See "Machinery Wanted.")

W. Va., Gassaway.—Gassaway Telephone Co. will construct four miles of telephone line; no bids. (Recently noted incorporated with \$10,000 capital stock.)

W. Va., Oak Hill.—Oak Hill Telephone Co., capital stock \$25,000, incorporated by Cal Mankin, George M. Jones, J. G. McLain and others.

W. Va., Slatyfork.—Marlinton & Elk Mutual Telephone Co. incorporated by Robert Gibson and John Gibson of Slatyfork, W. Va. and Levi V. Gay of Edray, W. Va.

TEXTILE MILLS

Ga., Rossville.—Hosley.—Richmond Hosley Mills will install electrical power; obtain electricity from local transmission system; plans by Lockwood, Greene & Co., 83 Federal St., Boston, Mass., and Greenville, S. C.

Miss., Stonewall.—Sheetings, etc.—Stonewall Cotton Mills will erect one-story 41x128-foot finishing-room for enterling, calendering, etc., and one-story 50x236-foot dyehouse; has awarded contracts.

N. C., Bladenboro.—Cotton Yarns.—Bladenboro Cotton Mills awarded contract to J. W. Robertson, Raleigh, N. C., to erect 103x419-foot brick building costing \$35,000 to \$40,000; also awarded contract for 8000 spindles, 450-horse-power steam plant (cost \$7500) and other machinery costing \$115,000; engineer-architect in charge, R. C. Biberstein of Charlotte, N. C. (Organization and plans previously reported.)

N. C., Randleman.—Flax, etc.—Deep River Mills will add 30 40-inch revolving flat-top cards, 29 deliveries metallic drawing, 6x12 slubber, 72 spindles, etc.; has awarded contract.

S. C., Union—Print Cloth, etc.—Union-Buffalo Mills Co. is receiving proposals for building and chimney for steam plant auxiliary to water-power of Broad River; 51x68-foot building (addition to boiler-house) and stack 200 feet high, 9 feet 6 inches diameter; has contracted for six horizontal return tubular boilers, 78-inch diameter; two condensers, two pumps and necessary piping; work is simply reorganization of power plant; engineer in charge, Charles T. Main, 201 Devonshire St., Boston, Mass. (Lately mentioned.)

Tenn., Springfield—Woolen Blankets.—Springfield Woolen Mills Co. will add four broad looms, 60-inch card, three 230-spindle mule frames, burr picker and mixing picker; cost \$12,000; contracts awarded; expects soon to order two double-acting nappers. (Previously reported as contemplating additions.)

WATER-POWER DEVELOPMENTS

Ga., Atlanta.—Central Georgia Transmission Co., Macon, Ga., has authority from Georgia Railroad Commission, Atlanta, to issue \$2,000,000 common stock and \$2,500,000 bonds; purposes of issue as follows: General organization, \$25,000; purchase of rights of way and construction of 66,000 voltage steel tower transmission line from Griffin to Atlanta, \$188,500, distance being 34 miles; erection of brick and concrete substations of 9000-kilowatt capacity, with apparatus, in Atlanta, \$82,500; substations at Hampton and Jonesboro, each of 900-kilowatt power, with apparatus, \$25,000 each; acquisition of land and erection and equipment of steam plant of 5000-kilowatt power, \$425,000; construction of distribution lines in and around Atlanta, \$117,500; acquiring right of way, constructing and equipment of 66,000 voltage transmission line from Griffin to Barnesville, Thomaston, Manchester, Newnan, La Grange and West Point, distance of 150 miles, 11,000 voltage transmission line to Grantville, Hogansville, Palmetto and Friburn, 46 miles, with substations at Thomaston, Manchester, Newnan, La Grange and West Point, and 31 miles distributing lines, \$1,035,000; acquiring lands, 66,000 voltage high-tension line from Central Georgia Power Co.'s plant on Okmulgee River to Covington, Social Circle, Madison, Monroe, Monticello and Eatonton, 81 miles, and erection of substations at each city of 900-kilowatt capacity, and 30 miles of distributing lines at each station, \$685,000. Figures embraced within scope of plans are 288 miles transmission lines, 95 miles in distributing system, auxiliary steam plant in Atlanta and 14 substations with combined capacity 26,100 kilowatts. Plans submitted by commission to Riggs & Anderson of Ann Arbor, Mich., consulting engineers, and they approved. (Organization and plans for transmission systems from hydro-electric plant of Central Georgia Power Co., of Macon, recently detailed.)

Ky., Bowling Green.—D. Y. Johnson has, it is reported, leased site on Barren River and will build hydro-electric plant.

Mo., Jefferson City.—R. W. Morrison of St. Louis, Mo., and associates are, it is reported, planning to construct hydro-electric plant on Osage River between Jefferson City and Kansas City, requiring two dams to develop 65,000 horse-power and expenditure of \$5,000,000. John A. Laird, St. Louis, engineer in charge, wishes Manufacturers Record: "Plans not in shape to give details; will do so when they are finished."

N. C., Asheville.—Asheville Light & Power Co. acquired Asheville Electric Co. properties (from Carolina Light & Power Co., Raleigh, N. C.) and will develop as needed in future; includes electric plant and railway, hydro-electric plant on Hominy Creek, water-power site on French Broad River eight miles below Asheville, etc.; issue bonds for \$5,000,000, of which \$3,800,000 will be issued for improvements and additions; H. W. Plemmons is manager. (New company recently reported incorporated with \$2,000,000 capital stock and to take over these properties.)

Okla., Pauls Valley.—Washita Electric Power Co. has plans to construct timber dam across Washita River.

S. C., Catechee.—Norris Cotton Mills Co. does not contemplate enlarging dam or installing hydro-electric plant, as recently reported.

S. C., McColl.—P. B. Parish of Clio, S. C., has franchise to furnish electricity; will transmit from hydro-electric plant on Little Pee Dee River, 10 miles east of Clio; plans to double this development.

Tenn., Centerville.—C. J. Kelfer of Reliance Engineering Co., Fourth National Bank Bldg., Cincinnati, O., has been investigating Duck River between Columbia and Centerville with view of constructing hydro-electric plant. (John W. Frye of Columbia, Tenn.,

and associates recently reported as planning this plant.)

Tenn., Clinton.—Tennessee Hydro-Electric Co. applied to Congress for permission to build dams across Clinch and Powell rivers; plans to construct two dams on Clinch River, near Island Ford, to generate electricity for transmission to Nashville, Knoxville and Chattanooga; incorporators were F. M. Butler, J. R. Cox and J. H. Wallace of Clinton, Tenn.; James B. Cox of Knoxville, Tenn., and J. R. Paul of Pittsburgh, Pa. (Recently reported incorporated with \$100,000 capital stock.)

Tenn., Parksville.—Tennessee Power Co. incorporated with \$20,000,000 capital stock by Fielding H. Yost and E. J. Hamilton of Nashville, Tenn., and others; as recently stated, this corporation will be organized by Tennessee Railway, Light & Power Co. of Nashville to own and develop its water-power properties; has 20,000 horse-power hydro-electric plant and will add 15,000 horse-power; construct No. 2 plant for 16,000 horse-power, and has third site for 30,000 horse-power; also controls Great Falls on Caney Fork River, capable of 80,000 horse-power, etc.; engineers, H. M. Byllesby & Co., 206 LaSalle St., Chicago, Ill. (Other details recently reported.)

Va., Clifton Forge.—Francis R. Weller, engineer, Hibbs Bldg., Washington, D. C., states plant of Clifton Forge Public Service Corporation will be located on Jackson River, 7 miles from Clifton Forge and 4 miles from Covington, Va.; will construct cyclopean concrete spillway dam 250 feet long; power-house, integral part of dam, to be of reinforced concrete fireproof construction; propose to install three-wheel units of 600 horse-power each; vertical shaft wheels; 450 K. V. A. umbrella-type generators, D. C. at end of each wheel shaft; generator voltage 2300, to be raised to 11,000 volts for transmission to Clifton Forge and Covington; transmission lines contracts awarded and work commenced; about 7000 yards cyclopean and plain concrete and 2200 yards reinforced concrete in dam and power-house; no formal opening of bids, but contracts probably let within next 30 days. (Recently noted.)

Va., Lexington.—Rockbridge Power Corporation plans to construct hydro-electric plant at Goshen Pass, developing 8000 horse-power; transmit electricity to Lexington, Buena Vista, Clifton Forge, Covington, Staunton, Waynesboro and Basic City; awarded contract for Clifton Forge-Covington transmission line to John L. Livers of Lancaster, Pa., and Grottoes, Va.

W. Va., Kingwood.—West Penn Traction Co., Wm. S. Kuhn, president, voted to accept proposition of American Water-Works & Guarantee Co., James S. Kuhn, president, both of Pittsburgh, Pa., to organize West Penn Traction & Water Power Co. with \$27,000,000 capital; will develop water-power of Cheat River in West Virginia; Cheat River Hydro-Electric Co. heretofore organized for this purpose and controlled by American corporation, has begun construction. (Plan for new organization recently detailed.)

WATER-WORKS

Ala., Athens.—City votes May 27 on bond issue to extend water system. Address The Mayor.

Ala., Gadsden.—City, W. G. Bellenger, Mayor, will install 300 to 500 water meters recently noted. Address M. E. Jones. (See "Machinery Wanted.")

Ala., Haleyville.—City contemplates constructing water-works to cost \$80,000 to \$100,000; system includes tank, piping, pumps and engines; supply to be secured from springs or well; M. S. Denny, City Clerk.

Ark., Springdale.—City has retained Winters & Dove, civil and hydraulic engineers, 311 Merchants' National Bank Bldg., Fort Smith, Ark., to prepare plans for water-works; bids probably received in 90 days. (Recently noted.)

Fla., Fort Meade.—W. E. Arthur, secretary Bond Trustees, states city's plans for water-works will probably not take definite shape before 60 days; R. C. McClellan, Mayor. (Bond issue of \$19,000 recently noted voted.)

Ga., Cartersville.—City votes May 25 on \$32,000 bond issue for extending water-works, etc. Address The Mayor. (See "Schools.")

Ga., Stone Mountain.—Town contemplates construction of water-works. Address Town Clerk.

Ky., Henderson.—Filter Committee will recommend to Common Council issuance of \$75,000 of bonds for filter construction; about \$80,000 required for completion of plant; W. I. Thompson, Mayor.

N. C., Reidsville.—City will make water-

works extensions and install filter plant recently noted; 5½ miles wood pipe; pumping station; filter plant capacity 500,000 gallons per 24 hours; Mayor and Board of Commissioners receive bids until 8 P. M. May 21; E. W. Myers, engineer, Greensboro, N. C. (See "Machinery Wanted.")

N. C., Tryon.—Polk County Water Co. will construct water-works; purchased watershed of Little Falls Creek, 200 acres, on north side of Melrose Mountain; will pipe water to distributing reservoir with capacity 100,000 gallons; extend 6-inch main pipe from reservoir to Trade St., 6000 feet, and in case of fire supply 746 gallons per minute; company has capital stock of \$25,000; address J. Foster Searles. (Recently reported incorporated.)

N. C., Winston (postoffice at Winston-Salem).—City votes in July on \$50,000 bond issue to extend water mains and improve plant. Address The Mayor. (Amount increased from \$40,000, as recently stated.)

Okla., Avarad.—City has, it is reported, awarded contract to C. E. Humrichouse, Carmen, Okla., to construct water-works, including five miles of mains; water to be secured from springs.

Okla., Muskogee.—Mountain Springs Water Co., capital stock \$10,000, incorporated by C. M. Raisig and J. C. Shaffer of Muskogee, Okla., and H. H. McFann of Sapulpa, Okla.

Okla., Webers Falls.—City voted issuance of \$17,000 water-works bonds. Address The Mayor.

S. C., Barnwell.—City votes May 8 on bond issue to construct water-works and electric-light plant. Address The Mayor. (Recently mentioned.)

S. C., McColl.—Town contemplates constructing water-works. Address Town Clerk.

S. C., Orangeburg.—City contemplates laying water main from present standpipe to Edisto River. Address The Mayor.

Tex., Brownwood.—City postponed date of opening bids to construct earthen reservoir from April 16 (as lately stated) to May 7; D. B. Andrews, secretary. (See "Machinery Wanted.")

Tex., Dallas.—Dallas Distilled Water Co., capital stock \$10,000, incorporated by Jas. Dunlap, H. L. Dreyer and N. E. Tucker.

Tex., New Braunfels.—City will construct water-works and electric-light plant; bids opened May 22; W. K. Palmer Company, engineer, 717 Dwight Bldg., Kansas City, Mo.; C. A. Jahn, Mayor. (See "Machinery Wanted.")

Tex., Palacios.—City purchased water-works for \$8000 and will vote on \$25,000 bond issue for extensions and improvements. Address The Mayor.

Tex., San Antonio.—Artesian Gardens Water Co. incorporated by H. D. Mantion, C. H. Jackson, Henry E. Parkham, Thomas Bann and others.

Tex., Waco.—Company temporarily organized to drill test well for hot water; proposes capital stock of \$25,000; Sam Sanger, president; W. S. Duke, Jr., vice-president; Peyton Randle, secretary.

Va., Clifton Forge.—City voted \$100,000 bond issue to acquire plant of Clifton Forge Light & Water Co. Address The Mayor. (Recently mentioned.)

Va., Graham.—Town voted \$50,000 bond issue to improve water-works and streets and erect school. Address Town Clerk.

W. Va., Elkins.—City Clerk invites bids until 4 P. M. June 5 to repair reservoir; A. Middlemas submitted plans and specifications to City Council.

W. Va., Grafton.—City voted \$90,000 bond issue to rebuild water-works; work includes power-house and smokestack, river intake and connections, removal and installation of machinery; maximum capacity 4,000,000 gallons daily; W. C. Hanway, City Clerk, Box 286; Riggs & Sherman Co., engineer in charge.

WOODWORKING PLANTS

Ala., Decatur.—H. H. Hitt Lumber Co. will build planing-mill, basket and coffin factories, and probably other woodworking plants.

Ark., Fort Smith.—Staves.—W. A. Mathews & Sons, stave manufacturers, Pine Bluff, Ark., will build finishing plant.

Ark., Malvern.—Wagons, etc.—Panama Manufacturing Co., S. F. Sherman, president, 635 McCallie Ave., Chattanooga, Tenn., will be incorporated to manufacture dump wagons, portable dump boxes, road machinery, motor trucks and veneer stock; will take over Newark Wagon Co., Newark, N. Y., and other interests; purchased plant and equipment of Rockwell Manufacturing Co.; 72,000 square feet floor space; will further equip with

wagon-making and veneer machinery. (See "Machinery Wanted.")

Fla., Apalachicola.—Shingles, Boxes, etc.—R. G. Porter, J. H. Hodges and W. P. McCormick will, it is reported, build shingle mill, box factory and veneering and furniture plant.

Ga., Atlanta.—Buggies.—Golden Eagle Buggy Co. purchased former plant of Atlanta Buggy Co. for \$40,000; will operate for manufacturing purposes.

Ky., Louisville.—Boxes.—Booker Box Co., capital stock \$35,000, incorporated by S. E. Booker, Bodley Booker and Robert G. Gordon.

Ky., Winchester.—Boxes.—C. F. Rood will build box factory.

Mo., St. Louis.—Cabinets.—Colonial Cabinet Co., capital stock \$10,000, incorporated by Herman S. Albrecht, August Schoellhorn and Allen B. Clifford.

N. C., Garner.—Doors, Sash, etc.—Garner Lumber Manufacturing Co. will be incorporated with \$25,000 capital stock; J. J. Bagwell, president; C. E. Kuester, manager; erect 40x180-foot building; 200-foot shed; ordinary construction; corrugated buildings; to be built locally; install 35 woodworking machines; manufacture building materials, sash, doors, etc. (See "Machinery Wanted.")

N. C., High Point.—Veneer.—Southern Veneer & Panel Co. leased plant of High Point Veneer & Panel Co., already equipped, and will manufacture rotary cut oak and poplar and built-up three-ply panels; W. C. Munyan in charge. (Recently noted incorporated with \$50,000 capital stock.)

Tenn., Grapevine.—Staves and Headings.—Welch Stave & Heading Co., Monterey, Tenn., will build stave and heading plant; expects to produce 5000 staves daily.

W. Va., Bluefield.—Furniture.—Appalachian Furniture Co. will expend about \$16,000 on building recently noted; proposals opened April 27; three-story brick 64x200-foot structure; proposals opened about July 16 on machinery to manufacture kitchen, dining and bedroom furniture; officers not yet elected; building plans by J. E. Phelps, Bluefield, to whom correspondence should be addressed. (See "Machinery Wanted.")

W. Va., Huntington.—Veneer.—Central Veneer Co. will make improvements at veneer factory, including installation of cutter and automatic dryer; two stories; 40x60 feet; contracts let; daily capacity 200,000 feet poplar veneers.

BURNED

Ala., Bessemer.—J. W. Rarden & Son's store on Second Ave.; loss \$10,000.

Ala., Birmingham.—Residences of Robert Pearson, J. J. Crim, N. B. McMullen, J. D. Tarrant, Alex. Pogue, Will Buck, C. M. Murray, R. H. Pogue, J. A. Wood, J. C. Mosen, R. M. Stewart, O. W. White, J. C. Bishop, E. S. Bishop, Mrs. Sutherland, J. C. Leonard, John Gowers, Mr. Early, Mr. Schultz and three vacant houses; loss \$40,000.

Ala., Greensboro.—Greensboro Academy.

Ala., Huntsville.—Residences of Mrs. W. S. Cobb, Thomas Kent, J. W. Jordan and M. K. Irvine; loss \$6000.

Ala., Paint Rock.—Lawrence Gormley's residence; loss \$5000.

Ark., Junction City.—C. A. Harris Wholesale Grocery Co.'s warehouse.

Ark., Lewisville.—Lewisville House, Mrs. Wooley's restaurant and dwelling.

Ark., Little Rock.—Wait Bldg., occupied by Leifer Seed Co.; loss \$10,000.

Ga., Atlanta.—R. W. Simon's store; loss \$10,000.

Ga., Columbus.—Coca-Cola Bottling Co.'s buildings at 1118 and 1122 Fifth Ave., loss \$7500; E. Phillips' two buildings at 1140 and 1142 Fifth Ave., loss \$6000; Thodes Browne's building at 1144 Fifth Ave., loss \$7500; Annie K. Woolfolk's building at 421 12th St., loss \$4000; Mrs. Lizzie Lee Candler's buildings at 419 and 409 12th St. and 1209 and 1243 Fifth Ave., loss \$14,500; Russell F. Jones' building at 417 12th St., loss \$3500; Mrs. W. Blanford's building at 405 12th St., loss \$3500; Mrs. L. H. Chappell's building at 401 12th St., loss \$3500; G. P. Miller's building at 1234 Fourth Ave., loss \$3000; C. J. Tunc's building, loss \$3500; B. F. Gordon's building at 1217 Fifth Ave., loss \$6000; C. J. Edge's building, loss \$3500; Mrs. M. L. Walker's building at 1222 Fifth Ave., loss \$4000; W. T. Harvey's building at 1247 Fifth Ave., loss \$4000; Mrs. Jackson's building at 401 13th St., loss \$3000.

Ga., Jonesboro.—Mrs. E. O. Morrow's building, loss \$5000; Mrs. W. T. Moyers' building, loss \$4000; Mrs. W. T. Stewarts' building, loss \$5000; A. S. Martin & Son's building, loss \$4000; Jonesboro Enterprise

plant, loss \$2500; S. Schlomberg's building, loss \$7500.

Ky., Fulton.—Farmers' Union Milling Co.'s flour mill; loss \$20,000.

Ky., Louisville.—Louisville Paper Co.'s plant at 231-233 E. Main St.; loss \$150,000.

Ky., Pewee Valley.—Mrs. Carrie Coleman's residence; loss \$3500.

Md., Harrisonville.—Mrs. E. A. Strickland's residence, Iyonrest, near Harrisonville, owned by Dr. E. A. Thomas, 403 W. Saratoga St., Baltimore, Md.

Md., Catonsville.—Grace African Methodist Episcopal Church at Winters Lane near Edmondson Ave.; Rev. C. E. Murray, pastor; loss \$6000.

Md., Mardela Springs.—Nathan Clausden's hotel; loss \$7000.

Miss., Sumner.—Sumner Gin Co.'s cotton gin; reported loss \$15,000.

Miss., Valden.—Cain Hotel; loss \$4000.

Mo., Canton.—Reliable Button Factory; loss \$18,000.

Mo., Frankford.—Mrs. R. W. Byrnes' building; E. C. Jackson's building; Reuben Johnston's building; Independent Order of Odd Fellows' building; loss \$15,000.

Mo., Kansas City.—Burgett Manufacturing Co.'s mop factory at 19th St. and Grove Ave.; loss \$3700.

N. C., Fletcher.—Curtis Bynum's creamery.

N. C., Hendersonville.—Mrs. Bessie Egerton's building; loss \$3000.

N. C., Winston-Salem.—I. P. Taylor's tobacco warehouse.

Okla., Chelsea.—Chelsea Refining Co.'s oil plant.

Okla., Vinita.—Vinita Refining Co.'s oil plant.

S. C., Anderson.—Anderson County Hospital; loss \$50,000.

S. C., Chester.—Robert L. Caldwell's residence at Rocky Creek.

S. C., Timmonsville.—John McSweeney Company's store, recently reported burned with loss of \$30,000 to \$40,000, was but slightly damaged.

Tenn., Knoxville.—Marion Apartments on W. Cumberland Ave. near Walnut St.; loss about \$50,000.

Tenn., Limestone.—Gillespie & Foster's stable; Carson Tobacco Co.'s warehouse; W. N. Walker's undertaking establishment; loss \$5000.

Tenn., Memphis.—Prescott School at Chelsea Ave. and Moorehead St.; loss \$15,000. Address The Mayor.

Tenn., Shelbyville.—William S. Newson's residence in twentieth district of Bedford county; loss \$6000.

Tex., Cookeville.—Garrett Hardware Co.'s store; Keith Bros.' building; R. T. Blaylock's store; loss \$17,000.

Tex., Dallas.—Mrs. Sam Marcus' residence at 417 Lacy St., occupied by Mrs. Carrie Avery; loss \$3500.

Tex., Decatur.—Adams Express Co.'s office building, owned by J. A. Nance of Palestine, Tex.; loss \$8000.

Tex., Eagle Pass.—International Coal Mines Co.'s shaft No. 2; loss \$15,000.

Tex., Ennis.—First Ward school building. Address The Mayor.

Va., Damascus.—Cole & Hale's store and hotel; loss \$4000.

Tex., Petrolia.—Watson & Pepper's store; B. Slayback's building; Taylor & McAllister's store; building owned by Sidney Webb of Bellevue, Tex.; loss \$10,000.

Tex., Purdon.—Theodore Matthews Dry Goods Co.'s store, loss \$5000; Dr. Sanders' drug store and office, loss \$4000.

Tex., Silver Valley.—Smith Bros.' store; loss \$3500.

Va., Norfolk.—Atlantic Peanut Co.'s plant at 162-164 Water St. damaged; loss \$6000 to \$8000.

Va., Saltville.—Flour mill at McCrady's Gap, owned by McCready, Lamle & Co., and leased by Thomas Sanders; loss about \$8000.

W. Va., Paden City.—Paden City Hotel; loss \$5000.

Tex., El Paso.—William Rossing will erect store and apartment building. (See "Stores.")

Tex., Houston.—Charles Dillingham will erect apartment-house on Fannin St.; three stories; brick; 126x57 feet; cost \$32,000.

Va., Norfolk.—G. F. Wilkinson will expend \$1000 each to erect several brick tenement-houses; 15x44 feet each; six rooms each; gravel roof; plans and construction by owner. (Recently noted under "Dwellings.")

Va., Richmond.—Alfred C. Bossom, 366 Fifth Ave., New York, is reported as preparing plans for apartment-house at Laurel and Franklin Sts. for syndicate; 40 apartments.

ASSOCIATION AND FRATERNAL

Fla., Miami.—Benevolent Protective Order of Elks will erect proposed lodge building.

Ky., Owensboro.—Masonic Temple Co. will expend \$70,000 to erect Masonic Temple, store and office building; 80x90 feet; fireproof construction; low-pressure steam heat; electric elevators; slag or gravel roof; plans by J. Riley Gordon, 607 Fifth Ave. (Recently noted to receive bids until April 29.)

La., Morgan City.—Morgan City Lodge No. 1121, Benevolent Protective Order of Elks, is reported as to erect lodge building; Thomas L. Morse, chairman of building site committee.

Miss., Greenwood.—Greenwood Lodge, No. 854, Benevolent and Protective Order of Elks, W. L. Anthony, secretary, will open bids May 6 to erect lodge building; fireproof construction; slate roof; cost \$20,000; plans by R. H. Hunt, Chattanooga, Tenn. (Recently noted to receive bids until May 7.)

Tenn., Chattanooga.—Benevolent and Protective Order of Elks, W. L. Anthony, secretary, Greenwood, Miss., has plans by R. H. Hunt, 1225 James Bldg., Chattanooga, for Elks' home; 53x80 feet; ordinary construction; vitreous rough-surface brick facing; heating and lighting plans not determined; cost \$20,000; bids opened May 6. For further information address the secretary.

Tenn., Memphis.—Ancient Free and Accepted Masons requested Jones & Furbringer, Memphis, to submit plans for lodge building; cost about \$250,000. (Recently noted.)

Tenn., Nashville.—Salvation Army inaugurated campaign to raise \$60,000 to erect industrial home; plan to erect building with assembly hall to seat 400; hotel for workmen, bath, free laundry; detention home for girls, etc.; H. E. Howse, chairman of campaign committee.

Tenn., Nashville.—Sigma Alpha Epsilon Fraternity of Vanderbilt University will erect chapter-house; brick veneer; two stories; cost \$8000.

Tex., El Paso.—El Paso Lodge No. 187, Benevolent Protective Order of Elks, will erect proposed temple; eight stories; site 120x120 feet; cost \$30,000.

Tex., Ennis.—Mrs. M. E. Alexander will erect business and lodge building. (See "Stores.")

Tex., Kenedy.—Ancient Free and Accepted Masons plan to erect third story to lodge building.

Tex., Temple.—Midlothian Lodge, No. 50, Knights of Pythias, adopted plans to enlarge and improve castle hall on 1st St., near Ave. A; will erect third story, new front, etc.; cost \$8000.

Va., Bedford City.—New Elks' National Home Commission, Sinton Hotel, Cincinnati, O., will receive bids until May 23 to erect national home of Benevolent Protective Order of Elks; lump and separate bids for series of buildings, consisting of administration building, seven dormitories, hospital and power-house, and shall cover masonry, terra-cotta, reinforced concrete construction, cement work, plastering, painting and decorating, plumbing and sewerage, sheet metal and tile roof, composition roof, glass, mosaic and tile, finished hardware, electric wiring and heating; separate bids on boilers, engines and generators required; plans and specifications at office of architects, Ottenheimer, Stern & Reichert, 105 W. Monroe St., Chicago, Ill.; certified check, payable to the order of August Herrmann, chairman, for five per cent. amount of bid. (Previously

Ark., Warren.—First National Bank, H. L. Turner, president, will erect bank building.

D. C., Washington.—German American Fire Insurance Co. of New York, 1335 New York Ave. N. W., is having plans prepared by A. Goenner, 35 Bliss Bldg., Washington, for office building on 7th St. between E and F Sts.; four stories; brick; granite and terra-cotta trimmings; 25x120 feet; fireproof construction; hot-water heat; slag roof; cost \$30,000; bids opened May 15.

Fla., Lawley.—Lawley State Bank, H. C. Peace, cashier, will expend \$4500 to erect bank building; 50x50 feet; brick and concrete; acetylene piping; metal roof; plans by N. L. Goin, Gainesville, Fla. (Recently noted to receive bids until April 23.)

Fla., South Jacksonville.—Bank of South Jacksonville will erect bank building at Hendricks Ave. and St. Johns Ave.; brick; mission style; 22x44 feet; five stories; diamond-shaped plate-glass windows; two entrances; public space of tiling; banking fixtures of mahogany; bronze gratings, grill work and marble counters; red Spanish tile roof; vault walls 17 inches thick, with inside dimensions of vault 7x8x8 feet; steel lined; grille partitions of steel; doorway equipped with spring lock and alarm bell; safe and safety deposit boxes of burglar and fire proof construction.

Ga., Moultrie.—T. H. Parker and W. E. Aycock are reported as contemplating erection of office building opposite postoffice.

Ga., Moultrie.—A. Huber has plans by Marshall & Lang, Moultrie, for store and office building; 62x92 feet; five stories; stores on first floor; brick and wood construction; steam heat; electric lighting; electric elevator; gravel roof; day labor; supervised by G. W. Milligan; also erect three stores, 15x92 feet; two stories; cost \$50,000. (See "Machinery Wanted.")

Ky., Bowling Green.—W. Walters will erect office and store building. (See "Stores.")

Ky., Lexington.—Fayette National Bank of Lexington, J. E. Bassett, president, will, it is reported, erect bank and office building; 12 to 15 stories; site 61x71 feet; steel construction; fireproof; first three stories probably of stone and upper floors of brick with terra-cotta trimmings. Bank wires Manufacturers Record: "Details as far as possible next week."

Ky., Louisville.—John P. Starks, 318 Paul Jones Bldg., is having plans prepared by D. H. Burnham & Co., Chicago, Ill., and McDonald & Dodd, Louisville, for office building; 14 stories and basement; fireproof construction.

Ky., Owensboro.—Masonic Temple Co. will erect store, office and Masonic building; bids received until April 29. (See "Association and Fraternal Buildings.")

N. C., Charlotte.—J. M. McMichael, Charlotte, N. C., is preparing plans for office building; five stories; fireproof reinforced concrete and brick; steam heat; electric lighting; electric elevator; concrete sidewalks. (See "Machinery Wanted.")

N. C., Rutherfordton.—Commercial Bank has plans by Wheeler & Stern, Charlotte, N. C., for bank and office building; two stories; 51x85 feet; ordinary construction; brick; granite trimmings; buff brick; vaults; structural steel; steam heat; electric lighting; tile and tin roof. (Recently noted.)

S. C., Greenville.—James Finlay, Chattanooga, Tenn., has plans for store and office building; bids opened May 6. (See "Stores.")

S. C., Greenville.—J. E. Sirrine will expend \$4000 to improve and remodel Carrier Bldg. for office and drafting-room; plans by owner.

Tenn., Bluff City.—Bluff City Bank will erect building to replace burned structure. (Recently reported burned.)

Tenn., Memphis.—B. G. Lee will erect building for railroad ticket office; two or three stories; brick and stone.

Tex., Marshall.—Citizens' State Bank has plans by C. G. Lancaster to remodel bank building; 30x16 feet; ordinary construction; electric lighting; cost \$3000; contract will be let locally. (Recently noted.)

Tenn., Nashville.—Tennessee Trust Co. leased building on College St. and is having plans prepared by C. K. Colley, Nashville, to remodel for banking purposes; classic style; Bowling Green stone or marble; double stone columns three feet in diameter from granite block bases to height of about 27 feet; entrance of Bowling Green stone; weathered oak doorway with hammered bronze studs; plate glass over door set in copper ribs with bronze cast panels between first and second story windows; tile floors; marble and bronze bank fittings; will also remodel building at 300 Third Ave. and install elevator in building at 212 Union St.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ala., Birmingham.—J. A. Brice, Oneonta, Ala., has plans by H. D. Breeding, Birmingham, for apartment-house on Sixth Ave. North; cost \$10,000.

Ala., Birmingham.—Robert Stevens has plans by H. D. Breeding, Birmingham, for apartment-house on 16th St. and 5th Al.; brick; four suites of six rooms; steam heat; cost \$12,000.

D. C., Washington.—Howard M. Etchison, 1882 Columbia Rd. N. W., has plans by M. T. Vaughn, Woodridge, Washington, D. C., for apartment-house at 2219 California St. N. W.; five stories; brick and reinforced concrete; cost about \$70,000. (Recently noted.)

D. C., Washington.—W. A. Gross, 711 8th St. S. E., will erect apartment and store building. (See "Stores.")

Ga., Atlanta.—Mrs. Cora Hines will erect apartment-house at Peachtree and 11th Sts.; cost \$20,000.

Ga., Atlanta.—L. B. Sanders will erect apartment-house at 224 Forrest Ave.; cost \$15,000.

Ga., Atlanta.—L. and E. Werner will erect apartment-house at 49 Washington St.; cost \$25,000; plans by Frederick B. Crowell.

Ga., Atlanta.—W. H. Witham will erect apartment-house at 67 Highland Ave.; two stories; cost \$7500.

Ga., Savannah.—Joseph Maril will erect store and apartment building. (See "Stores.")

Mo., Kansas City.—Faulkner & Chapeze will erect four stores and apartments. (See "Stores.")

Mo., St. Louis.—John Laucks, 4280 Red Bud Ave., will expend \$6000 to erect apartment-house; two stories; ordinary and mill construction; slate roof; plans and construction by owner.

Mo., St. Louis.—Cornwell Building & Investment Co., 810 Chestnut St., will erect three-story tenement-house at 6039 Waterman Ave.; 52x36 feet; ordinary construction; steam heat; composition roofing; cost \$30,000; plans and construction by owner.

Mo., St. Louis.—W. Degenhardt will erect two two-story tenement-houses at 4221-23 Page St.; cost \$8000.

Mo., St. Louis.—American Real Estate Building & Investment Co. will erect apart-

ment building; four and five-room apartments; cost \$4500.

Mo., St. Louis.—J. Kline will erect two-story tenement-house at 4378-80 Natural Bridge; cost \$4400.

Mo., St. Louis.—E. Heintze will erect two-story tenement-house at 3964 St. Louis Ave.; cost \$6000.

Mo., St. Louis.—S. Specter will erect two-story store and tenement-house. (See "Stores.")

Mo., St. Louis.—T. L. Rubenstein will erect store and tenement-house. (See "Stores.")

Mo., St. Louis.—Annie Broughton will erect three-story tenement-house at 5511 Cabanne St.; cost \$10,000.

Mo., St. Louis.—Emma Moritz will erect two-story tenement-house at 4448-50 Garfield St.; cost \$4500.

Mo., St. Louis.—Mrs. Elizabeth Dwyer will erect store and apartment building. (See "Stores.")

Mo., St. Louis.—A. G. McGowan will erect two-story tenement-house at 5215 N. Market St.; cost \$7000.

Mo., St. Louis.—J. Stueck will erect two-story tenement-house at 3940 Hartford St.; cost \$4000.

Mo., St. Louis.—William Cuba, 3019 Ohio Ave., will erect one-story four-room \$2000 residence at 4536 Varrelman Ave.; \$6000 two-family apartment-house of 10 rooms and two baths at 4128 Botanical Ave.; five single three rooms and bath apartments at 4200-4204 Warne Ave. and 3440-3442 Nebraska Ave.; three-room two-family apartment at 3149 Michigan Ave.; total cost about \$35,000.

Okla., Cleveland.—Dr. C. W. Ballaine will erect apartment-house.

Okla., Muskogee.—Robert L. Owen will erect apartment building at D St. and E. Broadway; 60x160 feet; two stories; 16 apartments of two rooms, bath and kitchenette; 16 apartments of three rooms, kitchenette and bath; ice boxes, ranges, bookcases and closets built in; brick; cost \$30,000.

Tenn., Nashville.—Dr. J. T. Johnson has plans by C. K. Colley, Life & Casualty Bldg., Nashville, for apartment building; three stories; ordinary construction; steam heat; electric lighting; tar and gravel roof; cost \$12,000; will open bids September 27.

BANK AND OFFICE

Ala., Cullman.—J. M. Kilpatrick will erect store and office building. (See "Stores.")

Ark., Little Rock.—John H. Martin of J. H. Martin Arms Co. purchased half interest in six-story steel frame of People's Life Insurance Co.'s proposed building, and will, it is reported, erect 12-story office building.

Mo., St. Louis.—Commercial Trust Co. will erect building at Jefferson Ave. and Olive St.; five stories; cost \$60,000.

Tex., Victoria.—Wilder & Holland will erect bank and store building; fireproof; six stories.

Tex., Wellington.—First National Bank will open bids May 14 to rebuild bank and office building; 25x110 feet; fireproof construction; cost \$12,000. (Recently reported burned.)

Tex., Wharton.—Wharton Bank & Trust Co. will erect addition to bank; pressed brick; two stories.

Va., Salem.—J. C. Terry will erect store and office building. (See "Stores.")

Va., Salem.—Acid Iron Mineral Co. will erect two-story brick building on College Ave.

W. Va., Huntington.—First National Bank will open bids in about six weeks to erect bank and office building; 12 stories; 60x130 feet; steel frame; concrete floors; steam heat; three electric passenger elevators; composition roof; cost \$250,000; plans by Verus T. Ritter, Ritter Bldg., Huntington. Address architect. (Recently noted.)

CHURCHES

Fla., Orlando.—Methodist congregation will erect edifice; cost about \$32,000; will install \$6000 pipe organ. Address The Pastor, Methodist Church.

Ky., Lexington.—First Baptist Church, Rev. J. W. Porter, pastor, has not selected architect to prepare plans for edifice. (Recently noted to cost \$60,000 to \$75,000.)

Md., Havre de Grace.—Baltimore Baptist Church Extension Society, Eugene Levering, president, 26 South St., Baltimore, Md., is having plans prepared by J. Appleton Wilson, 801 Law Bldg., Baltimore, Md., for edifice at Congress and Stokes Sts.; cost about \$15,000.

Md., Texas.—Texas United Brethren in Christ Church will, it is reported, erect edifice; Eugene Parks, Otis U. Meyers, John C. Wilson and others, trustees.

Miss., Corinth.—First Baptist Church, Rev. J. P. Harrington, pastor, has plans by R. H. Hunt, Chattanooga, Tenn., for extensions and alterations to edifice; cost \$10,000; date of letting contract not fixed. Address The Pastor.

Miss., Meridian.—First Presbyterian Church will erect edifice; cost \$40,000. Address The Pastor, First Presbyterian Church.

N. C., Greensboro.—Westminster Presbyterian Church, Rev. C. E. Hodgkin, pastor, plans to erect edifice to replace present structure; cost about \$10,000.

N. C., Kannapolis.—Baptist Church, Rev. E. C. Andrews, pastor, will expend \$7000 to erect edifice; 77x46½ feet; brick; heating not decided; electric lighting; plans by J. M. McMichael, Charlotte, N. C. (Recently noted.)

N. C., Marion.—W. F. Morgan has plans by J. M. McMichael, Charlotte, N. C., for edifice; brick; hot-air heat; electric lighting; slate roof; cost \$18,000.

S. C., Bishopville.—Methodist congregation has plans by Wheeler & Stern, Charlotte, N. C., for edifice; architects may be addressed. (Recently noted.)

Tenn., Jackson.—First Methodist Church has plans by R. A. Heavener of Jackson and A. F. N. Everett of Atlanta, Ga., for edifice; cost \$65,000. (Recently noted.)

Tex., Dallas.—McKinney Avenue Baptist Church, Rev. J. H. Moore, pastor, will expend \$10,000 to improve edifice at McKinney Ave. and Routh St.; will stucco outer walls, construct concrete approaches, new floors and apartments for Sunday-school rooms, and offices.

Tex., Fort Worth.—First Baptist Church, Rev. J. Frank Norris, pastor, will erect edifice to replace burned structure; auditorium to seat about 3000, Sunday-school to seat about 2000, and banquet hall with capacity for 500; five stories; cost \$150,000. (Recently mentioned.)

Tex., Lancaster.—Bids received by C. D. Hill & Co., architects, 724 Wilson Bldg., Dallas, Tex., until May 1 to erect brick-veneer church; plans and specifications at office of architect and F. M. Hammond, secretary, Lancaster.

Va., Abingdon.—Southern Methodist Episcopal Church is having plans prepared by Baumann Bros., Knoxville, Tenn., for edifice.

Va., Accomac.—Building committee of Drummond Town Baptist Church invites proposals to erect edifice according to plans and specifications in office of A. J. Lilliston, Accomac, Va., with whom all bids must be filed on or before May 15 with certified check for \$100, payable to A. J. Lilliston.

Va., Clarendon.—First Baptist Church will erect Sunday-school building and later erect church. Address The Pastor, First Baptist Church.

W. Va., Wheeling.—Thomson Methodist Episcopal Church plans to erect edifice; cost about \$100,000; Will E. Stone is interested.

CITY AND COUNTY

Ala., Dadeville.—Jail.—Tallapoosa County Commissioners will, it is reported, erect jail.

Fla., Tampa.—City Hall.—City contemplates voting June 4 on \$300,000 bond issue for city hall; D. B. McKay, chairman Commissioners of Public Works. (See "Road and Street Work.")

Ga., Thomasville.—Hospital.—City will erect separate operating-room at City Hospital; four rooms; main operating-room 14x16 feet; anesthetic-room 8x8 feet; sterilizing-room 8x16 feet; locker-room, etc., 8x8 feet.

Ky., Manchester.—Jail.—Clay County Commissioners receive bids until June 1 to erect new jail according to plans and specifications by Pauly Jail Building Co., St. Louis, Mo.; plans and specifications on file at County Judge's office, and will be furnished on deposit of \$10 or certified check for said amount with T. J. Rawlings, chairman of jail committee; certified check for \$1000. (Recently noted.)

Mo., Kansas City.—Library.—James B. Jackson, secretary Board of Education, may be addressed relative to erecting library at 25th and Holmes Sts. (Recently noted.)

N. C., Winston-Salem.—Reformatory.—Judge Hastings will receive bids until May 3 to erect brick reformatory near Forsyth County Home; certified check for 2 per cent. amount of bid; plans and specifications at office of W. C. Northup, architect, Wachovia Bank Bldg., Winston-Salem. (Recently noted.)

Okl., Muskogee.—Library.—City has plans by Henry D. Whitfield, 169 Fifth Ave., New York, for library; fireproof construction; cost \$55,000; architect may be addressed. (Recently noted.)

Tex., Corpus Christi.—Municipal.—City Clerk will receive bids until May 10 to erect municipal building; certified check for 2 per cent. amount of bid; plans and specifications at office of City Clerk at Corpus Christi and H. A. Reuter & F. S. Jones, architects, San Antonio, Tex., or may be had on deposit of certified check for \$50.

Tex., Dallas.—City Hospital.—City Commissioners will receive plans and specifications, consisting of floor plans, street elevations, two sectional drawings and perspective, until July 1 for city hospital; standard fireproof material; steel or reinforced concrete frame; one or two stories and basement; pavilion plan; electric lights; cost not to exceed \$85,000; architects to file declaration accepting terms of competition on or before May 1; other details on application to J. B. Winslett, City Secretary. (Recently noted.)

Va., Richmond.—Police Station.—Board of Police Commissioners will receive bids until May 6 to erect addition to First Police Station; certified check for \$500; plans and specifications at office of A. F. Hunt, architect, 1107 E. Main St.; George E. Pollock, secretary, Department of Police, Room 112 City Hall.

COURTHOUSES

Tex., Montague.—Montague County Commissioners, A. W. Ritchie, County Judge, will open bids about June 20 to erect courthouse; 90x110 feet; fireproof construction; steam heat; acetylene-gas lighting; Spanish tile roofing; cost \$100,000; plans by George E. Burnett, Waco, Tex. (Recently noted.)

DWELLINGS

Ala., Birmingham.—Mrs. C. C. Hafer will erect two-story brick-veneer residence on N. 28th St. between Tenth and Eleventh Aves.; cost \$4000.

Ala., Birmingham.—H. P. Johnson will erect two-story brick veneer residence on 32d St.; cost \$3500.

Ala., Birmingham.—J. D. Smith will erect two-story frame residence at 1400 N. 30th St.; cost \$4000.

Ark., Russellville.—Central Presbyterian Church awarded contract to erect manse. Address The Pastor, Central Presbyterian Church.

Fla., Jacksonville.—Eugene Hale will erect two-story brick-veneer dwelling at Goodwin and Lemon Sts.

Fla., Miami.—Miss L. Lynch will erect residence; 32x34 feet; concrete walls; wood joists; green glazed tile roof; plans by H. H. Mundy, 12th St., Miami. (Recently noted.)

Ga., Atlanta.—C. K. Nelson will erect two-story frame residence at 731 Piedmont Ave.; cost \$5000.

Ga., Atlanta.—T. J. Simmons will erect one-story frame dwelling at 3 Greenwood Ave.; cost \$4000.

Ga., Atlanta.—Dr. J. H. Powell will erect residence on Peachtree St.

Ga., Columbus.—Dr. G. S. Murray, 1539 Third Ave., will receive bids through Fred J. Orr, architect, 712 Southern Mutual Bldg., Athens, Ga., until May 4 to erect residence; brick and stucco; two stories.

Ga., Douglas.—J. M. Ashley will erect brick and stone residence.

Ga., Moultrie.—Mrs. Ione R. Pidcock has plans by Jack Head, Atlanta, Ga., for bungalow; cost \$3000.

Ky., Louisville.—Minnie P. Boesche will erect brick dwelling at 3401 High St.; cost \$6700.

Ky., Louisville.—Pat Walsh will erect frame dwelling at 632 S. 38th St.; cost \$4500.

Ky., Louisville.—Mary C. Girdler will erect two frame dwellings at 2100 and 2102 Date St.; cost \$1800 each.

La., Bogalusa.—Southern Wood Distillate & Fiber Co. will erect 50 cottages; is receiving bids.

La., Dalcour.—Charles F. Childress, 720 General Taylor St., will open bids within 30 days to erect dwelling recently noted; four rooms; ordinary construction; shingle roof; five-foot front gallery; two chimneys; brick foundation, four feet high; architect not selected. (See "Machinery Wanted.")

La., New Orleans.—William Surgi will erect four double cottages on St. Phillip St.; cost \$4000.

La., New Orleans.—J. Y. Baquie will erect residence at Arcadia Heights.

La., New Orleans.—Ernest Willie will erect bungalow at Arcadia Heights.

La., New Orleans.—H. Jordan McKenzie will erect bungalow at Arcadia Heights.

La., New Orleans.—George Kneipp will erect double residence; two stories; cost \$3500.

La., New Orleans.—W. J. Morgan will erect five double cottages; cost \$6000.

Md., Baltimore.—Kathland Realty Corporation has plans by Henry J. Tinley, 312 N. Charles St., Baltimore, for two cottages on Kathland Ave. near Oakford Ave.; two and a half stories; frame; 26x30 feet; tile roofs; verandas; concrete foundation; cost \$4000 each.

Md., Baltimore.—Owners Realty Co., Charles and Lexington Sts., has plans by C. W. Price, 149 Belvidere Ave., Baltimore, for 125 dwellings at Dupont Park; two stories; porch front; brick; concrete foundation; cement sidewalks and cellars; hot-water or steam heat; electric lights; cost \$175,000.

Md., Baltimore.—T. Milton Jones, 1806 Madison Ave., will erect 105 dwellings on McCulloch and Whitelock Sts.; two stories; brick; 13x50 feet; cost \$142,500. (Recently noted.)

Md., Baltimore.—W. H. Roberts of W. H. Roberts & Co., foot of Fells St., has plans by Henry J. Tinley, 312 N. Charles St., Baltimore, for dwelling at Mont Alto; two and a half stories; frame; cost about \$5000; E. G. Turner, 3405 Bateman Ave., Baltimore, is estimating.

Md., Baltimore.—James Keelty, 320 Oliver St., has plans by Jacob F. Gerwig, 600 Equitable Bldg., Baltimore, for 24 dwellings on Harlem Ave. near Ashburton St.; two stories; brick; 15x15 feet; steam heat; electric lights.

Md., Baltimore.—J. C. Kaestner has plans by Consolidated Engineering Co., Bromo-Seltzer Tower Bldg., Baltimore, for cottage on Belair Rd. near Mayfield Ave.; two and a half stories; frame; cost \$3000; contractors estimating are Consolidated Engineering Co., Bromo-Seltzer Tower Bldg.; R. B. Mason, 210 E. Lexington St.; Henry A. Knott, 1305 Homewood Ave., and A. L. Whitaker, all of Baltimore.

Md., Baltimore.—Elgin Land Co., Thomas R. Bond, representative, 619 Galtier Estate Bldg., acquired tract with 5000 feet frontage and will, it is reported, erect 75 dwellings; two stories; cost \$113,000.

Maryland.—Samuel F. Nixon of Nixon & Zimmerman, Philadelphia, Pa., is reported as considering purchase of site on Severn River to erect bungalows and establish actors' colony.

Md., Catonsville.—H. M. Rowe, 21 W. Fayette St., Baltimore, Md., is having plans prepared by Walter M. Gleske, 66 Gunther Bldg., Baltimore, Md., for cottage on Johnnycake Rd.; stone; slate roof; cost \$15,000.

Md., Catonsville.—George Heinmueller, 626 Frederick Ave., is having plans prepared by Walter M. Gleske, 66 Gunther Bldg., Baltimore, Md., for store, bakery and dwelling. (See "Stores.")

Md., Eccleston Station, postoffice at Stevenson.—K. Lancaster Williams will award contract to John Cowan, 106 W. Madison St., Baltimore, Md., to erect residence; two and

a half stories; brick and stucco; cost \$10,000; plans by L. H. Fowler, 347 N. Charles St., Baltimore, Md. (Recently noted.)

Mo., Kansas City.—Abraham Rosenberg, 4340 Rockhill Rd., will erect residence in Janssen Pl.

Mo., Kansas City.—E. W. Hayes will erect six dwellings at 5101, 5105, 5107, 5111, 5119 and 5121 Walnut St.; two stories; wood, with brick, stucco or stone veneer; cost \$3000.

Mo., St. Louis.—Goodenough Real Estate Co. will erect two one-story dwellings at 4918-22 Elchelberger St.; cost \$4000.

Mo., St. Louis.—Philip Bond Fouke, president of Funsten Bros. Company, is having plans prepared by G. W. Hellmuth, St. Louis, for residence on Portland Pl.

Mo., St. Louis.—Moses Shoenberg, vice-president of May Department Stores Co., is having plans prepared by Will Levy, St. Louis, for residence on Kingsbury Pl.

Mo., St. Louis.—J. A. Dwyer will erect two-story dwelling at 3014 Longfellow St.; cost \$5500.

Mo., St. Louis.—W. C. McBride will erect addition to dwelling at 5527 Washington St.; cost \$6000.

Mo., St. Louis.—William Cuba, 3019 Ohio Ave., will erect residence at 4536 Varrelman Ave. (See "Apartment-houses.")

Mo., St. Louis.—Frank L. Dittmeier is reported as planning to erect about 10 dwellings.

Mo., St. Louis.—L. Kreinhelder will erect three one-story dwellings at 4965-69 Loughborough Ave.; cost \$5100.

Mo., St. Louis.—H. R. Scholmz will erect two-story dwelling at 5028 Lansdowne St.; cost \$4000.

Mo., St. Louis.—H. W. Mephram will erect two two-story dwellings at 3809-11 De Tonty St.; cost \$8000.

Mo., St. Louis.—J. B. Turner will erect two-story dwelling at 3829 Lafayette St.; cost \$3800.

Mo., St. Louis.—F. J. and P. T. Saum will erect four two-story residences at 1818-19-21-23 Lawrence St.; cost \$12,000.

Mo., St. Louis.—John C. Greulich Realty Co. will erect number of dwellings on Farlin Ave. near Red Bud Ave.

Mo., St. Louis.—W. Walters will erect two one-story dwellings at 2416-18 Emerson St.; cost \$4000.

Mo., St. Louis.—O. Totenhaus will erect two-story dwelling at 4419 Tennessee St.; cost \$4800.

Mo., St. Louis.—A. Cornwell Building & Improvement Co. will erect two-story dwelling; cost \$1500.

N. C., Charlotte.—J. G. Baird has plans by Wheeler & Stern, Charlotte, for dwelling; six rooms; brick veneer; hardwood floors; steam heat; electric lighting; tile roof; cost \$4000.

N. C., Charlotte.—T. T. Gilmer will soon open bids to erect dwelling recently noted; nine rooms; heating and lighting undetermined; shingle roof; plans by F. L. Bonfoey, Charlotte. (See "Machinery Wanted.")

N. C., Greensboro.—R. C. Strudwick will erect residence; two stories; eight rooms; brick veneer and shingles; cost \$3000.

N. C., Raleigh.—G. A. Holden will erect residence; cost \$4000.

N. C., Salisbury.—S. H. Wiley will erect cottage at Fulton Heights.

N. C., Winston-Salem.—P. O. Leak will erect residence.

N. C., Winston-Salem.—F. J. Luppert has plans by J. E. Kennedy for 10 four-room dwellings; frame; cost \$5000.

Okl., Chickasha.—C. T. Sigmin has plans by Harold Macklin, Room 203 O. C. Terminal Bldg., Chickasha, for residence; brick.

Okl., Oklahoma City.—B. F. Burwell will erect \$30,000 residence.

S. C., Greenville.—Charles E. Mackey will erect two-story dwelling on Sumner St.; cost \$3000.

Tenn., Memphis.—Gilbert Real Estate & Investment Co. will erect residences at 1743 Linden Ave. and 575 and 585 Le Master St.; cost \$3900.

Tenn., Nashville.—E. T. Lewis will erect if one-story three-room dwellings on Seventh Ave. near Crawford St.

Tenn., Nashville.—Colored State Normal School Trustees have plans by C. K. Colley, Nashville, for residence for President W. J. Hale; two stories; brick; cost \$5000.

Tenn., Nashville.—Dan E. McGugin will erect residence; brick veneer; cost \$4500.

Tenn., Rockwood.—Jack Tarwater will erect residence on Kingston Ave.

Tex., Dallas.—A. L. Clark will expend \$15-

000 to remodel and repair residence at 4907 Ross Ave.

Tex., Dallas.—Mrs. M. Randa will erect residence at 1500 Annex Ave.; cost \$3500.

Tex., Dallas.—A. E. Hunt will erect residence at 3639 Wendelken St.; cost \$4000.

Tex., Dallas.—E. V. Mumpower will erect residence at 2500 Maple Ave.; cost \$4000.

Tex., Dallas.—Mrs. L. J. Nelson will erect residence at 440 Center St.; cost \$3500.

Tex., El Paso.—G. A. Rush will erect two-story eight-room residence on Mesa Ave.; stucco exterior; full basement; cost \$6000.

Tex., Houston.—T. J. Marett will erect seven-room residence at Avondale; cost \$5000.

Tex., Houston.—Mrs. J. L. Campbell will erect eight-room residence; cost \$3200.

Tex., Marlin.—T. A. Cheeves is having plans prepared by Alfred Giles Company, Marlin, Tex., for residence; cost \$30,000.

Tex., San Antonio.—Dr. Fred Terrell is having plans prepared by Alfred Giles Company, San Antonio, for residence in Terrell Heights.

Va., Lynchburg.—M. E. Jordan will erect frame and shingle dwelling on Elmwood Ave.; cost \$5000.

Va., Lynchburg.—George W. Venable will erect frame and shingle residence on Rivermont Ave.; cost \$4700.

Va., Norfolk.—C. C. Fitch will erect frame residence at Colonial Ave. and 37th St.; cost \$2000; construction by owner.

Va., Richmond.—F. R. Moorefield will erect two-story brick dwelling at 2231 W. Grace St.; cost \$5000.

Va., Richmond.—Dr. Joseph A. White will expend \$10,000 to repair dwelling at 200 E. Franklin St. and erect four-story addition.

Va., Richmond.—G. R. Nolde will erect two-story detached brick dwelling at 2613 E. Grace St.; cost \$4500.

Va., Richmond.—Miss Minnie G. Levy will erect residence at 2608 Monument Ave.; three stories; frame; cost \$10,000.

Va., Richmond.—Misses Elizabeth and Louise Rupp will erect brick dwelling at 2412 Grove Ave.; cost \$3000.

W. Va., Wheeling.—H. E. Caldwell will erect residence in Springdale.

GOVERNMENT AND STATE

Fla., Sarasota.—Postoffice.—Palmer Florida Co. will erect proposed postoffice building. (See "Miscellaneous Structures.")

Ky., Frankfort.—Executive Building.—Commissioners of Sinking Fund will expend \$10,000 to remodel east wing of executive building; install hydraulic elevator; tin roof; plans by Leo L. Oberwarth, Independent Order of Odd Fellows' Bldg., Frankfort. (Recently noted to receive bids until May 1.)

Md., Jessup.—Reformatory.—Governor Phillips Lee Goldsborough, Annapolis, Md., signed bill providing \$100,000 bond issue for improvements to House of Correction.

Mo., Mexico.—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., opened bids to erect postoffice building. George W. Stiles Construction Co., Chicago, Ill., is lowest bidder for limestone construction at \$58,850, and General Construction Co., Milwaukee, Wis., is lowest bidder at \$64,859 for sandstone construction. (Recently noted.)

Okla., Muskogee.—Postoffice.—Treasury Department, Office of Supervising Architect, James Knox Taylor, Washington, D. C. Proposals received at this office until June 5 for construction (except mechanical equipment) of United States postoffice and courthouse at Muskogee; fireproof; four stories; stone faced; copper roof; ground area, 30,400 feet; drawings and specifications obtainable from custodian of site or this office, at discretion of Supervising Architect.

S. C., Abbeville.—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., opened bids to erect postoffice; George Becking, Chattanooga, Tenn., is lowest bidder at \$38,403 for limestone and at \$40,603 for sandstone construction. (Previously noted.)

S. C., Gaffney.—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., opened bids to erect postoffice building; W. J. Brent, Norfolk, Va., is lowest bidder at \$45,495; marble exterior.

HOTELS

Fla., Miami.—Vivian A. Rutherford will erect addition to the Rutherford; 10 rooms, with bath to each two rooms.

Fla., Miami.—C. W. Gardner will erect addition to Royalton; reinforced concrete; lower floor for stores; upper floors for hotel.

Fla., Sarasota.—Tonneler Bros., St. Peters-

burg, Fla., will erect proposed hotels, store and theater building; 100x100 feet; two stories; brick; day labor; plans by owners.

Fla., Seabreeze.—Clarendon Hotel, W. S. Kenny, manager, will, it is reported, improve hotel; add 150 rooms each with private bath, provide golf course, etc.

Ga., Columbus.—Frank Springer will erect 55-room addition to Springer Hotel and make improvements; cost \$25,000.

Miss., Jackson.—Carnes & Jones of Memphis, Tenn., are reported as to erect hotel to replace burned structure.

Mo., St. Louis.—Maryland Hotel Co., Jas. H. McTague, president, will erect additional rooms to hotel.

Mo., St. Louis.—Weiss-Gerhart Company is reported as promoting erection of hotel at Broadway and Washington Ave.; 15 stories; fireproof; 450 rooms; cost \$1,000,000.

N. C., Bridgeport (not a postoffice).—M. L. Kessler, Thomasville, N. C., has plans by J. M. McMichael, Charlotte, N. C., for summer hotel; three stories; frame; electric lighting; shingle roof; cost \$40,000. (See "Machinery Wanted.")

N. C., Raleigh.—Jones & Bailey will erect addition to Bland Hotel; cost \$5000.

N. C., Salisbury.—Samuel McCubbins acquired sole interest in Ford Hotel for \$60,000, and is having plans prepared for improvements.

N. C., Southern Pines.—E. McMillan will erect hotel; cement-block construction.

N. C., Salisbury.—F. C. Abbott & Co. contemplate erection of hotel.

Okla., Rush Springs.—J. N. Harris will, it is reported, erect hotel; cost \$3000.

S. C., Sumter.—A. L. Jackson will expend \$55,000 to erect hotel; 55x120 feet; three stories and basement; ordinary construction; steam heat; electric and gas lighting; elevators not decided; tile roof; telephones; tile and marble; structural steel; limestone; plans previously noted prepared by Wheeler & Stern, Charlotte, N. C.

Tex., Kenedy.—P. R. Goff will erect hotel; two stories; 28 rooms; cost \$20,000.

Va., Richmond.—William Reuger will, it is reported, erect 10-story hotel at Bank and 9th Sts.; is having plans prepared. Mr. Reuger wires Manufacturers Record: "When definite conclusions are reached will give information."

MISCELLANEOUS

Ark., Crossett.—Postoffice, etc.—Crossett Lumber Co. will erect business building. (See "Stores.")

D. C., Washington.—Hospital.—Women's Home Missionary Society of Methodist Episcopal Church opened bids to erect addition to Sibley Hospital; six stories; 55x138 feet; pressed brick and stone; fireproof; porte cochere extending to sidewalk; screened balconies 135x12 feet on west side of each story, which may be converted into sleeping apartments; electric elevators; roof garden containing 7000 square feet space; will also enlarge lighting plant of present hospital; Melton Construction Co., 1317 H St. N. W., Washington, is lowest bidder at \$111,900; plans by William J. Palmer, Warder Bldg., Washington. (Recently noted.)

D. C., Washington.—Restaurant.—Robert Callahan, Jr., 2631 Connecticut Ave. N. W., will erect building at 711 13th St. N. W. for W. E. Beall, 1312 Park Rd. N. W.; plans by Hunter & Bell, 505 7th St. N. W., Washington.

Fla., Jacksonville.—Clubhouse.—Germania Club is having plans prepared by H. J. Kluth, Jacksonville, for clubhouse; frame; 55x130 feet; three stories and concrete basement; stone steps; lobby 17x38 feet; 12½ feet high; auditorium 55x75 feet; bathrooms and shower baths; steam heat; electric lights.

Fla., Sarasota.—Postoffice.—Palmer Florida Co. will erect proposed postoffice building; completion by September 1.

Fla., Miami.—Clubhouse and Library.—Woman's Club of Miami is having plans prepared by H. H. Mundy, 12th St., Miami, for clubhouse and library; concrete and red tile trimmings; seating capacity, 200. (W. C. De Garmo recently noted as preparing plans.)

Ga., Savannah.—Auditorium.—Chamber of Commerce is promoting erection of proposed auditorium and armory building.

Ky., Louisville.—Grandstand.—Kentucky State Fair Association, J. L. Dent, secretary, will receive bids until May 9 to extend grandstand at Kentucky State Fair grounds; plans and specifications at office of Joseph & Joseph, architects, 307 Commercial Bldg., Louisville.

Md., Baltimore.—Settlement-house.—Jewish

Educational Alliance, Max Carton, superintendent, 1204 E. Baltimore St., is having plans prepared by Joseph Evans Sperry, 400 Calvert Bldg., Baltimore, for settlement-house as memorial to M. S. Levy; cost \$80,000.

Mo., Kansas City.—Clubhouse.—Evanston Golf Club is considering site for proposed clubhouse, golf links, etc.

Mo., St. Louis.—Amusement.—St. Louis Amusement & Mercantile Co. will erect store and amusement building. (See "Stores.")

N. C., Winston-Salem.—Clubhouse.—Twin City Club will issue bonds to erect \$45,000 clubhouse; four stories; stone and brick.

S. C., Anderson.—Hospital.—Anderson County Association will rebuild hospital reported burned; loss about \$50,000; R. S. Ligon, H. C. Townsend and G. Louis Gray, committee.

Tenn., Columbia.—Hospital.—King's Daughters accepted plans by Alford Bros., Columbia, for proposed hospital; two stories and basement; stone and brick.

Tenn., Memphis.—Clubhouse.—St. Mary's Church will erect clubhouse and school. Address The Pastor, St. Mary's Church.

Tenn., Nashville.—Hospital.—Galloway Hospital Board is having plans prepared by Samuel Hannaford & Son, Cincinnati, O., for proposed hospital; cost \$500,000; C. S. Brown of Vanderbilt University will superintend construction. (Previously noted.)

Tex., San Antonio.—Clubhouse.—Illinois Club will be organized by C. F. Wright of Varna, Ill., and associates; will erect clubhouse.

Tex., San Antonio.—Chapter-house.—St. Mark's Episcopal Church is having plans prepared by Alfred Giles Company, San Antonio, for chapter-house in rear of rectory; three stories; fireproof; brick and steel; interior faced brick; reinforced concrete floors.

Tex., San Antonio.—Clubhouse.—San Antonio Automobile Club selected site for clubhouse on North Loop; will erect stone and reinforced concrete clubhouse, lighting plant, etc.; cost \$8000. (Recently noted.)

Tex., Weatherford.—Fair.—Parker County Fair Association will be reorganized with \$5000 capital stock by Joel W. Hicks, G. A. McCall, N. H. Martin and others; has option on site on S. Main St.; plans to provide ball park, fair and exposition buildings, etc.

Va., Alexandria.—Clubhouse.—Alexandria Motor Boat Club desires architects to submit sketches and plans for 24x36-foot clubhouse; electric wiring; shingle roof. (Recently noted.)

RAILWAY STATIONS

Ark., Fort Smith.—St. Louis, Iron Mountain & Southern Railway, E. F. Mitchell, chief engineer, St. Louis, Mo., will, it is reported, erect two-story brick passenger depot and improve yard and switching facilities.

Ga., Atlanta.—Atlanta, Birmingham & Atlantic Railroad, Alex. Bonnyman, general manager, will, it is reported, erect freight depot; 60x200 feet; cost \$102,000.

Ga., McDonough.—Southern Railway, B. Hermann, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., will erect depot; cost \$6000 to \$7000.

N. C., Hickory.—Southern Railway Co., B. Herman, chief engineer, 1300 Pennsylvania Ave., Washington, D. C., is receiving bids to erect passenger station; 30x132 feet; waiting-room for whites, 20x36 feet; for colored people, 23x28 feet; baggage-room, 16x28 feet; brick; tile roof; macadam driveway; concrete and chert platforms.

S. C., Great Falls.—Seaboard Air Line Railway, W. L. Seddon, chief engineer, Portsmouth, Va., will erect proposed station; cost \$12,000.

Tex., Caldwell.—Gulf, Colorado & Santa Fe Railway Co., F. E. Merritt, chief engineer, Galveston, Tex., will erect passenger station; 27 feet 4 inches by 129 feet; ordinary brick construction; hot-water heat; clay tile roofing; vitrified brick platform; screens; plate glass; plans ready by May 15. (Recently noted.)

SCHOOLS

Ala., Greensboro.—City will rebuild school; two stories; brick; semi-fireproof construction; cost \$12,000 to \$15,000; plans not made; E. P. McCollum, Mayor. (Recently noted burned.)

Ark., Beebe.—Beebe School Board will erect addition to school; auditorium, two recitation and study rooms; cost \$5000.

Fla., Bonifay.—Bonifay High School Trustees will rebuild structure; cost \$12,000 to \$15,000; architect not selected; A. J. Miller may be addressed. (Recently reported burned.)

Fla., Pensacola.—Escambia County Board of Public Instruction will probably open bids May 8 to erect 12-room and two 4-room school buildings; ordinary construction; stoves; character of roofing not determined; plans by S. J. Welsh; further information from N. B. Cook or School Board. (Recently noted.)

Ga., Atlanta.—English Girls' Commercial High School is having plans prepared by Hentz & Reid, Atlanta, for high school; four stories; cost \$10,000. (Recently noted.)

Ga., Cartersville.—City will vote May 25 on \$32,000 bond issue to improve schools, extend electric-light, gas and water-works systems. Address The Mayor.

Ga., Clarkson.—Christian Church of Georgia purchased 367 acres of land and will, it is reported, establish denominational school; plan is to erect three buildings to accommodate 300 students at cost of \$100,000; Joseph Hopwood of Atlanta, Ga., will be president.

Ga., Cochran.—Board of Education, F. D. Walker, chairman, has plans by Sayre & Baldwin, Anderson, S. C., for graded school; 60x100 feet; two stories and basement; nine classrooms, library, auditorium, etc.; direct and indirect steam heat; electric lighting; tin roof; cost \$20,000; plans ready by May 3, and may be had from architects on deposit of \$10. (Bond issue previously noted.)

Ga., Cuthbert.—Andrew College has plans by T. F. Lockwood, Columbus, Ga., for addition to college to connect two present buildings.

Ga., Decatur.—City voted \$30,000 bond issue to enlarge present school, erect new school, etc. Address The Mayor. (Previously noted.)

Ga., Greenville.—Sealed proposals received by Board of Education until May 23 to erect eight-room brick and frame school; certified check for \$300; plans and specifications obtainable from E. C. Hosford & Co., architects, Eastman, Ga., upon terms they may designate; further information from C. L. Cowart, secretary and treasurer. (Previously noted.)

Ga., Irwinville.—School committee is receiving bids to erect brick school.

Ga., Savannah.—Board of Education opened bids to erect proposed 37th Street school; International Steel & Iron Construction Co., Evansville, Ind., is lowest bidder at \$47,705; two stories; 16 rooms; mill construction; steam heat; Spanish tile roof; plans by Wallin & Young, Savannah. (Recently noted.)

Ky., Hopkinsville.—Bethel Female College will expend \$30,000 to erect dormitory; three stories; mill construction; hot-water heat; electric lighting; tile roof; plans by Walter & Brodie, Hopkinsville; bids opened May 1; James L. Long, 910 E. 7th St., may be addressed. (Previously noted.)

Md., Fullerton.—Baltimore County Commissioners, Towson, Md., have plans by Thomas L. Jones, 410 W. Saratoga St., Baltimore, Md., for proposed school; three stories; brick; slag roof; steam heat; metal ceilings; 68 feet 8 inches by 70 feet 8 inches; cost \$75,000; contractors estimating are Thos. B. Stanfield, 109 Clay St.; Walter E. Burnham, Law Bldg.; John Cowen, 106 W. Madison St.; John Hiltz & Son, 7 Clay St.; G. Walter Towell, Eutaw Pl. and Dolphin St., all of Baltimore, Md., and Henry Nagel, Catonsville, Md.

Mo., Columbia.—J. G. Babbs, secretary of University of Missouri, will receive bids until May 14 to erect chemistry building; plans and specifications from James P. Jamieson, architect, 800 Security Bldg., St. Louis, after April 30 on deposit of \$25.

Miss., Olive Branch.—De Soto County Agricultural High School will erect dormitory; 20 rooms and dining-room; fireproof; heating and lighting not determined; cost \$5000 to \$8000; plans by Walker Jones, Memphis, Tenn.; bids probably opened April 6; F. V. Holmes, Plumbpoint, Miss., may be addressed; R. E. L. Morgan, Hernando, Miss., county superintendent.

Miss., Hernando.—City will vote May 7 on \$14,000 bond issue to erect school. Address The Mayor.

Mo., Odessa.—City voted \$25,000 bond issue to erect high school. Address The Mayor.

Mo., University, P. O. at St. Louis.—University School District voted \$60,000 bond issue to erect high school. Address District School Trustees.

N. C., Bakersville.—Mitchell County Board of Education contemplates erection of school; cost about \$7000.

Okla., Oklahoma City.—Musical Institute of Oklahoma City, Frank H. Scheiber, general manager, will erect conservatory at 124 W. 5th St.; probably three stories; brick and stone; recital hall to seat 800; cost \$35,000.

S. C., Greenville.—Greenville Female College has plans by J. E. Sirrine, Greenville, for proposed additional dormitory in rear of main building; four stories; dining hall in first story; dormitory-rooms above; first story 132x52 feet; upper stories 52x86 feet; 42 rooms; steam heat; electric lights; running water in each room; low-pressure steam heat; tar and gravel roof; cost \$30,000; bids opened April 29.

Okla., Sand Springs.—Town will vote on \$20,000 bond issue to erect school. Address Town Clerk.

S. C., Norway.—Norway School District voted \$10,000 bond issue to erect school. Address District School Trustees.

Tenn., Chattanooga.—Grammar School Board of Education, J. A. Hargraves, chairman, will have plans prepared by Huntington & Sears, Chattanooga, for Fifth District, by R. H. Hunt, Chattanooga, for Sixth District, and by Adams & Alsip, Chattanooga, for First and Second district schools.

Tenn., Dickson.—City issued \$15,000 of bonds to erect proposed school. Address The Mayor.

W. Va., Shinnston.—Harrison county voted \$50,000 bond issue to erect high school. Address County Commissioners.

Tenn., Eagleville.—Rutherford School Board, Murfreesboro, Tenn., will erect school building, concrete or brick.

Tenn., Memphis.—St. Mary's Church will erect school and clubhouse. Address The Pastor, St. Mary's Church.

Tenn., Nashville.—Colored State Normal School Trustees have plans by C. K. Colley, Nashville, for residence for president. (See "Dwellings.")

Tex., Alta Loma.—E. Lane, architect, Houston, Tex., and J. M. Fendley, superintendent of county schools, will receive bids until May 3 to erect two-story brick school; certified check for \$500; plans and specifications at above offices.

Tex., Decatur.—Education Board, Baptist General Convention of Texas, Arthur J. Barton, secretary, Waco, Tex., has plans by C. W. Bulger & Son, Dallas, Tex., for boys' dormitory for Decatur Baptist College; 104x81 feet; ordinary construction; brick; steam heat; electric lighting; probably gravel composition roof; cost \$25,000; date of opening bids not determined; further information from architects, or may be had by addressing W. C. Carver, president; also contemplates erecting additional wing to present administration building and completing present girls' dormitory at cost of \$20,000. (Recently noted.)

Tex., Hamilton.—Hamilton School Incorporation will expend \$10,000 to erect school building; 50x70 feet; plans not determined; architect not selected. (Recently noted.)

Tex., Palestine.—School Board, C. A. Stern, secretary, has not adopted plans for school building six or eight rooms; \$20,000 bond issue voted. (Recently noted.)

Tex., Terrell.—City voted \$6000 bond issue to equip sewerage system for public schools and remodel auditorium at Central high school. Address The Mayor.

Tex., Tuscola.—Tuscola School District voted \$7000 bond issue to erect school. Address District School Trustees.

Va., Boydton.—School Board of Boydton District No. 1, Mecklenburg county, will receive plans, specifications and bids for erection of high-school building until May 20; brick construction; granolithic foundation; eight rooms, two of which may be combined for auditorium; two stories and basement; 12-foot hall; well raised tin roof; cost, exclusive of water and heat, not to exceed \$6000; certified check for \$100; C. J. Faulkner, clerk of Board.

Va., Graham.—Town voted \$50,000 bond issue for school improvements, etc. Address Town Clerk. (See "Water-works.")

Va., Wytheville.—Wythe School District will vote May 14 on \$12,000 bond issue to enlarge George Wythe School. Address District School Trustees.

W. Va., Newell.—City will vote May 21 on \$20,000 bond issue to erect school. Address Board of Education.

W. Va., Wierton.—City is reported as having plans prepared by M. L. Wells, Wellsburg, W. Va., for school; eight rooms.

STORES

Ala., Birmingham.—Lusk, Jones & Warren will erect two-story brick building at Eleventh Ave. and 26th St.; cost \$3500.

Ala., Cullman.—J. M. Kilpatrick will erect business building to replace burned structure; brick; three stories; lower floor for stores; upper floors for offices; cost \$8000.

Ala., Gadsden.—Phillips-Neeley Company

will probably erect building on South 4th St.

Ala., Selma.—Isidore Kayser & Co. will soon let contract to erect store building; three stories; 57x110 feet; ordinary and mill construction; plans by Okel & Cooper, Montgomery, Ala. (Recently noted.)

Ark., Crossett.—Crossett Lumber Co. is having plans prepared by Frank W. Gibb & Co., Little Rock, for three-story brick building to contain postoffice, stores and printing office.

D. C., Washington.—W. A. Gross, 711 8th St. S. E., will expend \$7000 to erect store and apartment building; 25x72 feet; brick and frame; hot-water heat; slag roof; bids opened April 24. (Recently noted.)

Fla., Miami.—E. A. Belcher will erect addition to building occupied by E. B. Douglass Company.

Fla., St. Petersburg.—Jones Bros. will erect business building to be occupied by Arthur Norwood.

Fla., Sarasota.—Tonnelier Bros., St. Petersburg, Fla., will erect store, hotel and theater building. (See "Hotels.")

Ga., Augusta.—S. H. Kress & Co., 396 Broadway, New York, will erect proposed store building on Broad St.; two stories; cost \$180,000.

Ga., Douglas.—Judge Lankford will erect business building; reinforced concrete.

Ga., Moultrie.—A. Huber has plans for store and office building; five stories; also erect three stores; 15x92 feet. (See "Bank and Office Buildings.")

Ga., Savannah.—Joseph Marli will erect store and apartment building at Broughton and Avercorn Sts.; three stories.

Ky., Bowling Green.—W. Walters will expend \$25,000 to erect store and office building; 100 feet square; ordinary construction; steam heat; gas and electric lighting; metal roof; architect not selected; bids opened in two months. For further information address Lon D. Hanes, agent, Bowling Green. (Recently noted.)

Ky., Owensboro.—Masonic Temple Co. will erect store, office and Masonic building; bids opened April 29. (See "Association and Fraternal Buildings.")

La., New Orleans.—C. Mozzolo will expend \$5700 for alterations and repairs to building.

Md., Baltimore.—John T. Donohue, 1808 Thames St., has plans by M. R. Stone, 2233 E. Hoffman St., Baltimore, for ship chandlery at 1804 Thames St.; four stories; brick; 18x57 feet; cost \$3000; construction by owner.

Md., Catonsville.—George Heilmüller, 626 Frederick Ave., is having plans prepared by Walter M. Gleske, 66 Gunther Bldg., Baltimore, Md., for store and dwelling at 634 Frederick Ave.; three stories; brick; store front, kitchen, pantry, bakehouse and oven in rear of first floor; upper floor for dwelling. (Recently noted.)

Mo., Kansas City.—Faulkner & Chapeze will erect brick stores and apartments at 804 W. 39th St.; cost \$4000.

Mo., St. Louis.—St. Louis Amusement & Mercantile Co. organized with C. L. Ernhart president; will increase capital stock to \$100,000 and erect store and amusement building at Delmar and Bayard Aves.; lower floor to have 10 stores; upper floors for dancing and amusements; ballroom 110x120 feet; cost \$50,000; plans by Kennerly & Ireland, St. Louis. (Previously noted.)

Mo., St. Louis.—St. Louis-Hyatt Photo Supply Co., 806 Washington Ave., leased building at 417 N. Broadway and 510 St. Charles St., and will expend \$15,000 for improvements.

Mo., St. Louis.—S. Specter will erect two-story store and tenement-house at 3016 Chipewa St.; cost \$5000.

Mo., St. Louis.—T. L. Rubenstein will erect store and tenement-house at 6172-78 Delmar Ave.; cost \$19,000.

Mo., St. Louis.—Mrs. Elizabeth Dwyer will erect store building at 3604-12 Olive St.; two stories; cost \$35,000; lower floor for store; upper floor for apartments.

N. C., Durham.—E. J. Parrish acquired site at Market and Chapel Hill Sts., and will, it is reported, erect three-story business building.

N. C., Greensboro.—W. F. Clegg will erect store building to replace burned structure; two stories.

N. C., Salisbury.—E. K. James & Son, S. Fulton St., will erect store building; two stories; brick.

N. C., Tryon.—Ballinger Company will erect addition to store building; 23x50 feet; two stories and basement; steam heat; electric or gasoline lighting; iron roofing; freight elevator; cost \$4000; construction by owners.

N. C., Wilmington.—J. S. Williams will erect store building; three stories; brick.

N. C., Winston-Salem.—Acid-Iron Mineral Co. will, it is reported, erect business building; two stories; brick.

S. C., Columbia.—Dr. L. B. Owens will erect brick building at 1323 Taylor St.; cost \$4000.

S. C., Rock Hill.—John T. Roddy will erect business building on East Main St.

S. C., Greenville.—James Finlay, Chattanooga, Tenn., has plans by Barnwell & Jones, Hamilton National Bank Bldg., Chattanooga, Tenn., and F. H. & J. G. Cunningham, associate architects, Greenville, for building at Main and North Sts.; 126x120 feet; two and three stories; dark brown vitrified brick; limestone trimmings; marble stairway leading to offices in upper floor of two-story section; lobby with tile floor and marble wainscoting; tiled hallways; electric lights; heating not determined; luxifer or bar lock sidewalks; electric freight elevator; tar and gravel roof; bids opened May 6. Address owner, care of Barnwell & Jones. (Previously noted.)

Tenn., Knoxville.—C. B. Atkin will, it is reported, erect four storerooms and garage.

Tenn., Memphis.—Irvin F. Bensdorf and associates are reported as to erect business building.

Tenn., Memphis.—Dr. M. Goltman, I. Samelson and associates will, it is reported, erect stone and brick business buildings.

Tex., Bryan.—Eugene Edge will erect business building; two stories; brick; 42x100 feet.

Tex., Dallas.—Sears, Roebuck & Co., Chicago, Ill., local offices at Harvard and Homan Sts., is having plans prepared by Lang & Witchell, Dallas, for building adjoining and similar to present structure on Austin St.; nine stories and basement; reinforced concrete; 150x150 feet; 200,000 square feet floor space; fireproof construction.

Tex., El Paso.—William Rossing will erect store and apartment building at Roosevelt and Mundy Sts.; cost \$10,000.

Tex., Ennis.—Mrs. M. E. Alexander will erect business and lodge building; three stories; brick; 25x135 feet.

Tex., Gonzales.—Remshel Bros will erect five business buildings; cement block.

Tex., Houston.—Bassett Blakely purchased site at Main St. and Lamar Ave. and will, it is reported, erect building.

Tex., Houston.—Texas Wholesale Dry Goods Co., George Herder, president, Wetmar, Tex., will probably erect business building.

Tex., Kenedy.—J. M. Nichols will erect business building; two stories; 60x80 feet.

Tex., San Antonio.—Mrs. Jot Guter will erect building to be occupied by Emil Blum Company; two stories; fireproof; 57½ feet frontage on first floor, 113 feet on second floor; 30,000 square feet floor space.

Tex., San Antonio.—M. Half & Bros. are having plans prepared by Alfred Giles Company, San Antonio, for store at E. Commerce and Rusk Sts.; 100x200 feet; four stories and basement; foundation for eight-story building; passenger and freight elevators; electric wiring; steel and reinforced

concrete; facing of brick and terra-cotta; curtain walls; reinforced concrete floors; fireproof. (Recently noted.)

Tex., Victoria.—Wilder & Holland will erect bank and store building. (See "Bank and Office.")

Va., Salem.—J. C. Terry will erect store and office building; brick.

THEATERS

Fla., Plant City.—S. E. Mays will erect opera-house.

Fla., Sarasota.—Tonnelier Bros., St. Petersburg, Fla., will erect theater, hotel and store building. (See "Hotels.")

Va., Staunton.—Albert Schultz and associates have plans by T. J. Collins, Staunton, for proposed New Theater; three stories; brick and terra-cotta; three entrances on Main St.; auditorium, smoking-rooms, cloak room; six boxes; seating capacity 1000; elevator. (Recently noted.)

WAREHOUSES

Ark., Delight.—Farmers' Union Warehouse Co. incorporated with \$25,000 capital stock; E. T. Langley, president; G. W. Reid, vice-president; A. M. Bowen, secretary-treasurer.

Ark., Hamburg.—W. R. Blanks is having plans prepared by Frank W. Gibb & Co., Little Rock, Ark., for warehouse; 80x120 feet; brick.

Ga., Shellman.—People's Warehouse Co. has plans by W. T. Jay & Co., Shellman, for warehouse; 175x100 feet; fireproof construction; cost \$10,000. (Recently noted.)

Ky., Carlisle.—Farmers' Loose-Leaf Warehouse Co. (Dr. J. W. Burns to be addressed) will erect warehouse; 150x250 feet; mill construction; steel frame; power elevator; composition roofing; cost \$15,000; company recently noted as increasing capital stock to \$100,000 and to erect additional warehouse. (See "Machinery Wanted.")

Ky., Louisville.—W. B. Miller will repair Louisville Public Warehouse at Brook and Main Sts.; cost \$5000.

Md., Baltimore.—Baltimore Bargain House, Jacob Epstein, proprietor, abandoned plans for this year to erect warehouse as recently reported.

Md., Baltimore.—Charles J. Bonaparte, 216 St. Paul St., will erect warehouse at 316 North St.; three stories; brick; fireproof; construction under supervision of John Cowan, 106 W. Madison St., Baltimore.

Mo., St. Louis.—Teuscher & Son Machinery Supply Co. will erect warehouse.

S. C., Spartanburg.—Spartanburg Warehouse Co. will expend \$7000 to \$10,000 to enlarge and improve warehouse.

Tex., El Paso.—El Paso Southwestern Railroad, H. J. Simmons, general manager, will erect auxiliary warehouse on Virginia St.; one story; brick; cost \$15,000.

Tex., Galveston.—Dolson Warehouse & Forwarding Co. incorporated with \$4000 capital stock by T. C. North, W. C. Johnson and J. A. Stephens.

Tex., San Antonio.—Southwest District Farmers' Union, A. L. Baker, president, Stockdale, Tex., will erect warehouse.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ark., Argenta.—E. O. Maness, 521 Main St., awarded contract to erect additional story to apartment and store building recently noted. (See "Stores.")

Ga., Columbus.—W. H. Crawford, Hotel Racine, awarded contract to L. E. Wooten to erect apartment-house recently noted; two stories; ordinary construction; hot-water heat; metal tile roof; cost \$7500. (See "Machinery Wanted.")

Ga., Savannah.—Mrs. J. T. Shuptrine awarded contract to Collins Bros. Co., Savannah, to erect four apartments on Bolton St.; brick; cost \$15,000.

Okla., Muskogee.—Thomas M. Pratt of Pratt & Pratt, Kansas City, Mo., awarded contract to erect four apartment-houses at 6th and Pon du Lac Sts.

Tenn., Memphis.—Frank Colosimo awarded contract to Jones Bros., Memphis, to erect store and apartment building. (See "Stores.")

Tex., Dallas.—N. M. Harper awarded contract to T. H. Johnson, 405 Fitzhugh St., Dallas, to erect apartment building; four apartments, four rooms and bath each; two stories; frame; ordinary construction; shingle roof; cost \$5000. (Recently noted under "Dwellings.")

Va., Richmond.—Enders Dickinson, Jr., 1622 Hanover Ave., awarded contract to Gann & Delaney, 1916 Floyd Ave., Richmond, to erect tenement-house; 6-room flats; ordinary construction; hot-water heat; gas and electric lighting; tin roof; cost \$10,881; plans by J. C. Lockman, 1903 W. Main St., Richmond. (Recently noted.)

BANK AND OFFICE

Ark., Hot Springs.—Hot Springs Building Co. awarded contract to Oklahoma Quarries & Construction Co., Oklahoma City, Okla., to erect bank and office building; 7 stories and basement; 25x166 feet; fireproof construction; electric lighting; gravel roof; cost \$75,000; cost of heating plant, \$5000; plans by Sanguinet & Staats, Fort Worth, Tex. (Citizens' National Bank recently noted as letting contract.)

Md., Frederick.—Frederick County National Bank will expend \$32,000 to erect bank and office building; 36x62 feet; fireproof construction; plans by A. Cookman Leach, 23 N. Charles St., Baltimore, Md.; contract recently noted awarded to John K. McIver, 7 Clay St., Baltimore, Md.

Mo., Kansas City.—Fidelity Trust Co. awarded contract to Lonsdale Bros., Kansas City, to erect addition to building at 9th and

Walnut Sts.; one and two stories; brick, stone and concrete; cost \$20,000.

Mo., St. Louis.—C. W. Wall awarded contract to Sutherland Construction Co., St. Louis, to erect store and office building. (See "Stores.")

N. C., Clinton.—W. C. Grove awarded contract to erect store and office building. (See "Stores.")

Tex., Big Springs.—West Texas Bank awarded contract to J. M. Williams, Abilene, Tex., to erect proposed bank building; brick; two stories; 50x140 feet; steam heat; cost \$40,000.

Tex., Rockdale.—First National Bank awarded contract to Thomas & Harrison, Rockdale, to erect bank building; two stories; brick; cost \$20,000.

CHURCHES

D. C., Washington.—St. Agnes' Episcopal Church awarded contract to Arthur M. Paynton, 715 14th St. N. W., Washington, to erect chapel; 75x35 feet; stone; brick; reinforced concrete floors; low pressure steam heat; electric lighting; cost \$95,000; plans by F. A. Fletcher, 1413 G St. N. W., Washington. (Recently noted.)

Ga., Claxton.—Methodist congregation awarded contract to J. T. Ragan, Lyons, Va., to erect edifice; brick; cost \$10,000; 26x62 feet; hot air heat; electric lighting; metal shingle roof; plans by T. W. Smith, Columbus, Ga.

Ky., Richmond.—First Christian Church awarded contract to J. C. and T. S. Todd, Richmond, to erect edifice; cost \$20,000 to \$30,000; plans by C. C. and E. A. Webber, Cincinnati, Ohio. (Recently noted.)

Md., Baltimore.—Corpus Christi Catholic Church, Lafayette and Mt. Royal Aves., awarded contract to Edward Brady & Sons, 1113 Cathedral St., Baltimore, to improve edifice; will construct stone spiral 175 feet high to replace present tower, rearrange interior and install new fixtures; plans by Parker, Thomas & Rice, Union Trust Bldg., Baltimore.

Va., Suffolk.—Baptist congregation awarded contract to J. H. Brinson, Hampton, Va., to erect edifice; cost \$20,000. (Previously noted.)

CITY AND COUNTY

Ala., Elba.—Jail.—Coffee County Commissioners awarded contract to Pauly Jail Building Co., St. Louis, Mo., to erect jail; cost \$17,000.

Ky., Greenville.—Jail.—Muhlenberg County Fiscal Court awarded contract at \$15,300 to W. T. Hanks, Louisville, Ky., to erect jail and jailer's residence, and at \$8500 to Stewart Iron Works, Covington, Ky., for steel and cell work; plans by Joseph & Joseph, Louisville, Ky.

La., Shreveport.—Fire Stations.—City awarded contracts to Garson Bros., P. Martineau and Tom Green, all of Shreveport, to erect three brick fire stations; cost \$13,693. (Recently noted.)

Md., Baltimore.—Stable.—City awarded contract to Consolidated Engineering Co., Emerson Tower Bldg., Baltimore, to erect stable; one story; slate roof; cost \$6,000. (Recently noted.)

Va., Richmond.—Public Bath.—John P. Branch awarded contract to erect public baths; stone facings; marble baths; plans by Russell Edward Mitchell.

COURTHOUSES

Tenn., Jonesboro.—Washington County Commissioners awarded contract to L. A. Gaylon, Knoxville, Tenn., to erect courthouse; steam heat; electric lights; cost \$45,000; plans by Baumann Bros., Knoxville, Tenn. (Recently noted.)

W. Va., Logan.—County Courthouse Building Committee awarded contract at \$62,330 to Falls City Construction Co., Louisville, Ky., to erect courthouse; plans by D. F. Smith, 517 14th St. N. W., Washington, D. C. (Recently noted.)

DWELLINGS

Ga., Atlanta.—L. E. Bennett will erect brick-veneer dwelling on St. Charles Ave.; 9 rooms; brick veneer; hot-air heat; gas and electric lighting; cement sidewalks; shingle roof; plans by Mr. Robinson, Peters Bldg., Atlanta; contract awarded to G. H. Butler.

Ga., Cartersville.—Robert Donahoo awarded contract to O. R. McElroy, Cartersville, to erect dwelling; two stories; nine rooms.

Ky., Louisville.—H. C. Hess will erect two-story brick dwelling and store at 501 E. Lampton St.; cost \$3200; two stories; brick; gravel roof; contract awarded to William Stieneker & Son.

La., Lake Charles.—Charles O. Noble

awarded contract to Miller & Ory, Lake Charles, to erect residence; cost \$10,000.

La., Bogalusa.—Great Southern Lumber Co. awarded contract to A. J. Denham, Bogalusa, to erect 35 five-room residences in North Bogalusa. (Recently noted to have awarded contract for 12 residences.)

La., Bogalusa.—New Orleans Great Northern Railroad, C. R. Howard, chief engineer, awarded contract to erect 20 cottages.

Md., Baltimore.—Patrick Kirwan, 104 W. Fayette St., awarded contract to William F. Welsh, 250 W. Preston St., Baltimore, to erect seven two-story porch-front dwellings on University Parkway and Charles-Street Ave.; 15x48 feet; seven rooms and bath.

Md., Baltimore.—Charles A. Sadtler awarded contract to Paca Realty Co. to erect one-story frame dwelling at Montgomery Rd. and Alto Ave.; 26x41 feet; cost \$1300; plans by John R. Forsythe, 232 St. Paul St., Baltimore.

Md., Baltimore.—J. W. Bigham, 235 Roslyn Ave., awarded contract to H. W. Johnson, 312 Equitable Bldg., Baltimore, to erect residence at Roslyn and Carlisle Aves.; one and a half stories; 40x13 feet; cost \$5000; plans by J. E. Lafferty, 11 E. Pleasant St., Baltimore.

Mo., Kansas City.—J. A. Butler awarded contract to W. B. Weaver, Kansas City, to erect dwelling at 514 Wyandotte St.; two stories; wood with stucco veneer; cost \$9000.

Mo., Kansas City.—N. W. Butler awarded contract to W. B. Weaver, Kansas City, to erect two-story dwelling at 5124 Wyandotte St.; cost \$10,000.

Mo., Kansas City.—George E. Paul, 610 Wyandotte St., has plans by and awarded contract to Zurn Building & Investment Co., Kansas City, to erect dwelling at 408 Wal-rond Boulevard; 26x36 feet; mill construction; hot-water heat; shingle roof; cost \$3200; cost of lighting \$150. (Zurn Building & Investment Co. recently noted to erect dwelling.)

Mo., St. Louis.—Dr. J. J. Link awarded contract to Murch Bros. Construction Co., Odd Fellows' Bldg., St. Louis, to erect proposed dwelling; 6x33 feet; two stories and attic; ordinary construction; brick and stone; hardwood finish; steam heat; slate roof; cost \$20,000; plans by W. Gouen, Chemical Bldg., St. Louis.

N. C., Charlotte.—John M. Morehead awarded contract to J. A. Gardner, Charlotte, to erect dwelling; cost \$40,000; plans by Louis H. Ashbury. (Recently described.)

N. C., Charlotte.—C. V. Palmer awarded contract to Charlotte Consolidated Construction Co., Charlotte, to erect residence.

N. C., Greensboro.—T. A. Armstrong awarded contract to McClamrock & Hughes, Greensboro, to erect proposed dwelling; cost \$15,000.

Okla., Oklahoma City.—Dan W. Hogan, president of Farmers' National Bank, awarded contract to F. J. Hawk, Oklahoma City, to erect proposed dwelling at 15th St. and Hudson Ave.; two stories and basement; 11 rooms; buff brick; tile roof; stone trimmings; half-circling veranda and porte cochere; ballroom in basement; four bath-rooms, etc.; vacuum cleaning system; steam heat; cost \$30,000; plans by J. W. Hawk, Oklahoma City.

S. C., Ellmore.—H. Walter Bookhart awarded contract to erect dwelling and store. (See "Stores.")

S. C., Greenville.—Dr. C. C. Gentry awarded contract to erect residence.

Tenn., Memphis.—Mrs. Jennie Storey awarded contract to F. C. Storey, Memphis, to erect residence; cost \$4900.

Tenn., Memphis.—P. H. Barker awarded contract to M. E. Hill, Memphis, to erect residence at 1279 Agnes Pl.; cost \$4520.

Tenn., Nashville.—Goodloe Lindsley awarded contract to erect residence; two stories; matt brick; white stone trimmings; 10 rooms with tile floors; two baths with tile wainscoting; cost \$5500; plans by C. K. Col-ley, Nashville.

Tenn., Nashville.—Joseph Warner awarded contract to W. F. Holt, Nashville, to erect residence; cost \$30,000.

Tenn., Nashville.—L. C. Glenn, 15 Hill Crest Ave., awarded all contracts to erect residence; cost \$4500. (Recently noted.)

Tex., Bonham.—Smith, Moore & Williams awarded contract to erect brick building on S. Main St.; cost \$12,000.

Tex., Dallas.—W. W. Graham, 3901 Colonial Ave., will erect residence at 2510 S. Boulevard; eight rooms; ordinary construction; hot-air heat; electric lighting; dumbwaiter; shingle roof; plans by Lang & Witchell, Dallas; contract awarded to Mark Turner. (See "Machinery Wanted.")

Tex., Dallas.—M. C. Turner, 510 Wilson Bldg., awarded contract to erect dwelling; ordinary construction; gas heat; shingle roof; cost \$3500. (Recently noted.)

Tex., Eagle Lake.—J. Nathan awarded contract to J. M. Bryant, Eagle Lake, to erect residence at McCart Ave. and Prairie St.; cost \$5500.

Tex., Sulphur Springs.—W. E. Kennemur awarded contract to Craft Bohanan, Sulphur Springs, to erect dwelling recently noted; 48x58 feet; 10 rooms; mill construction; hot-air heat; electric lighting; shingle roof; cost \$1000. (See "Machinery Wanted.")

Va., Norfolk.—K. A. Fisher will erect frame and brick residence on Pennsylvania Ave.; cost \$2000; awarded contract to W. L. Hines, Norfolk.

Va., Petersburg.—Mrs. James T. Aton awarded contract to E. J. Andrews, Peters-burg, to erect eight-room bungalow on Fill-more St.; plans by M. P. Andrews & Co., Petersburg.

Va., Roanoke.—F. B. Thomas awarded contract to J. W. Shields to erect dwelling; 43x48½ feet; ordinary construction; hot-water heat; gas and electric lighting; tin shingles; cost \$5000; plans by H. H. Hug-gins, Roanoke. (Recently noted.)

W. Va., McMechen.—Mrs. Elizabeth Riddle awarded contract to Portner-Balzer Com-pany, Wheeling, W. Va., to erect residence; cost \$4000; plans by George Dieringer, Wheeling, W. Va.

GOVERNMENT AND STATE

Ky., Louisville.—Hospital.—Tuberculosis Hospital Board awarded contract at \$22,000 to Alfred Markham & Co., Louisville, to erect hospital building at Waverly Hill; two stories; concrete, brick and stucco; accom-modations for 48 patients; plans by Joseph & Joseph, Louisville. (Recently noted.)

S. C., Orangeburg.—Postoffice.—Treasury Department, James Knox Taylor, Supervis-ing Architect, Washington, D. C., awarded contract at \$45,250 to Algernon Blair, Mont-gomery, Ala., to erect postoffice. (Previous-ly noted.)

HOTELS

Fla., Lakeland.—S. Raymondo awarded contract to Marshall & Sanders to erect hotel; 75x35 feet; 28 rooms; steel roof; plans by Mr. Smead. (Recently noted.)

Fla., Du Pont.—Du Pont Railway & Land Co., Scranton, Pa. (not Tippecanoe Securi-ties Co., as recently stated) awarded con-tract to Fink & Soidel, Reading, Pa., to erect 30-room hotel; latter company is selling agent only for land owned by Du Pont Rail-way & Land Co. in St. Johns and Volusia counties.

MISCELLANEOUS

Ark., Fort Smith.—Home.—Building Com-mittee of Rosalie Tilles Children's Home awarded contract at \$8233 to Jake Truschel, Fort Smith, for general work on children's home, and at \$1141 to Len O'Neal, Fort Smith, for foundation; fireproof; Carthage stone foundation; repressed paving brick facing; Carthage stone trimming; galvan-ized metal shingle roof.

Mo., St. Louis.—Swimming Pool.—Architect J. L. Wees, St. Louis, awarded contract to erect swimming pool in Forest Park High-lands; 120x250 feet; pool 60x175 feet; 400 dressing rooms; pool of white enameled brick, with cascade at one end to admit water; cost \$45,000.

Mo., St. Louis.—Hospital.—St. Louis Chil-dren's Free Hospital Association awarded contract to Hill-O'Meara Construction Co., St. Louis, to erect proposed south wing to Barnes Hospital at 943 Kingshighway; three stories; fireproof; cost \$80,000; plans by Mauran, Russel & Crowell, St. Louis. (Pre-viously noted.)

RAILWAY STATIONS

Fla., Pensacola.—Louisville & Nashville Railroad Co., W. H. Courtenay, chief engi-neer, Louisville, Ky., will expend \$125,000 to erect passenger station, including express, baggage and mail rooms; 106x500 feet; ordi-nary construction; granolithic sidewalks; tile and composition roofing; contract re-cently noted awarded to C. B. Ratliff, Box 80, Montgomery, Ala.; heating and lighting not included in contract.

Md., Hagerstown.—Western Maryland Railroad awarded contract to George Mc-Wolf, Hagerstown, to erect passenger sta-tion; three stories; lower story granite; up-per stories brick with terra-cotta trimmings; cost \$75,000.

SCHOOLS

Ala., Springville.—City awarded contract to H. M. Johnson & Son, Gadsden, Ala., to erect school building; 84x72 feet; fireproof

construction; cost \$7500; plans by D. O. Whit-din, Birmingham, Ala. (Recently noted.)

Ark., Argenta.—City awarded contracts as follows to erect high school: At \$67,163 to George W. Fair, for erection; at \$6650 to M. B. Sanders, for plumbing; at \$1620 to Arkan-sas Electric Co., for electric wiring; all of Little Rock, Ark.; at \$892 to Lewis & Kitchen, Kansas City, Mo., for heating; brick; 162x152 feet; gymnasium, shower baths, etc.; fan system of heating and ven-tilation; plans by C. L. Thompson, 504 South-ern Trust Bldg., Little Rock, Ark. (Recently noted.)

Fla., Tampa.—Miss Flora White and Miss Lydia Hafford awarded contract to Ander-son & Teasley, Tampa, to erect school on Shore St.; 38x29 feet; two stories; frame; seven classrooms; cost about \$3000; plans by A. H. Johnson, Tampa. (Recently noted.)

Fla., Tampa.—Hyde Park School District awarded contract at \$21,812 to Anderson & Teasley, Tampa, to erect proposed Hyde Park School; two stories; brick; plans by Bonfoey & Elliott, Tampa. (Recently noted.)

Ky., Sharpsburg.—City awarded contract to B. B. Whaley, Sharpsburg, to erect pro-posed graded school; cost \$15,000.

La., Lake Charles.—City awarded contract at \$123,741 to Reinhardt & Donovan Co., Okla-homa City, Okla., to remove present build-ings and erect four brick schools; plans by Favrot & Livaudais, 839 Gravier St., New Orleans, La. (Previously noted.)

Miss., Brooklyn.—Trustees of Agricultural High School Board awarded contract at \$19,739 to T. P. Crymes, Hattiesburg, Miss., to erect proposed high school, including two frame dormitory buildings of about 12 bed-rooms each with bath, lavatories, cupboards, dining-room, etc., and main or academic building; brick construction; 7x61 feet; two stories; basement; four columns on either side of main entrance; wide concrete steps; auditorium to seat 600 students. (Previous-ly noted.)

N. C., Clinton.—Board of Education, L. A. Bethune, chairman building committee, awarded contract to Reville, Camache & Co., 12 N. 2d St., Wilmington, N. C., to erect graded-school building; hot air or vacuum heat; cost \$15,000.

Okla., Ardmore.—Board of Education awarded contract at \$88,865 to L. F. Lee, Oklahoma City, Okla., to erect school; ordi-nary construction; plans by J. B. White, Ardmore. (Recently noted.)

S. C., Batesburg.—District No. 18 awarded contract to W. P. Doly & Son to erect pro-posed school building; eight rooms and au-ditorium; ordinary construction; slate roof; cost \$13,250; plans by Shand & Lafaye, Colum-bia, S. C.

Tex., Algon.—Independent School District will expend \$5000 (not \$20,000 as recently stated) to erect school; two stories; 50x90 feet; metal roof; plans by H. C. Shoemaker, Houston, Tex.; contract awarded to James Shapley, Houston.

Tex., College Station.—Directors of Agri-cultural and Mechanical College will expend \$75,000 to erect Young Men's Christian As-sociation and alumni building; fireproof construction; plans by F. E. Gibecke, Col-lege Station; contract recently noted award-ed to Street & Born, Houston, Tex.

Tex., Chico.—Murphy & Crost, Mineral Wells, Tex., have contract to erect proposed male and female institute.

Tex., Fort Worth.—Texas Christian Uni-versity awarded contract to Texas Building Co., Fort Worth, to erect proposed Clarke Hall or boys' dormitory; three stories and basement; cost \$75,000.

STORES

Ala., Beatrice.—T. T. Ivey awarded con-tract to W. E. Ward, Pineapple, Ala., to erect store; 25x90 feet; brick; ordinary construc-tion; plate-glass front. (See "Machinery Wanted.")

Ala., Birmingham.—Robert Jemison, Sr., 211 20th St., awarded contract to Realty Construction Co., First National Bank Bldg., Birmingham, to erect store building; 50x100 feet; two stories; mill construction; asbes-tos roofing; cost \$12,000; plans by W. C. Weston, Birmingham. (Recently noted.)

Ark., Argenta.—E. O. Maness, 521 Main St., awarded contract to Charles Thimon to erect additional story to store and apartment building; two stories; 50x110 feet; ordinary construction; natural-gas heat; five-ply felt, tar and gravel roof; cost \$15,000; plans by R. B. Robinson, Little Rock, Ark. (Recently noted.)

D. C., Washington.—S. S. Pennock-Meehan Company, 1608 Ludlow St., Philadelphia, Pa., awarded contract to C. A. Campbell, 1212 H

RAILROAD CONSTRUCTION

RAILWAYS

St., Washington, to erect business building; 23x36 feet; first floor fireproof; second floor wooden construction; steam heat; electric lighting; prism sidewalk lights; hand elevator; slag roof; cost \$14,000; plans by Frank G. Pierson, 918 Washington Loan & Trust Bldg., Washington. (Recently noted.)

D. C., Washington.—Washington Tobacco Co., 618 Pennsylvania Ave. N. W., awarded contract to James L. Marshall, 706 13th St. N. W., Washington, to erect building at 917 E. St. N. W.; three stories; fireproof.

Fla., Miami.—W. C. Groves awarded contract to John Muler, Miami, to erect two reinforced concrete store buildings; two and three stories.

Ky., Louisville.—H. C. Hess, 333 E. Market St., awarded contract to erect store and dwelling. (See "Dwellings.")

Ky., Louisville.—Isaac Rosenbaum & Son awarded contract to A. Markham & Co., 434 N. Floyd St., Louisville, to erect business building; 18x102 feet; ordinary construction; composition roofing; cost \$10,000; plans by Joseph & Joseph, Louisville. (Recently noted.)

Mo., St. Louis.—C. W. Wall awarded contract to Sutherland Construction Co., St. Louis, to erect store and office building at Vandeventer Ave. and Olive St.; 109x100 feet; six stories; fireproof; steam heat; electric lights; cost for construction alone, about \$160,000; plans by Milligan & Wray, St. Louis. (Previously noted.)

N. C., Clinton.—W. C. Grove awarded contract to erect one-story store building and three-story store and office building; 25x90 feet; to cost \$16,500.

Okla., Mountain View.—L. P. Larson, Chickasha, Okla., prepared plans and has contract to erect business building; brick.

S. C., Ellmore.—H. Walter Bookhart will erect business building and dwelling at Main and Cleveland Sts.; 40x60 feet; brick; ordinary construction; cost \$4500; contract awarded to B. E. Granby, Easley, S. C.

Tenn., Henning.—James B. Coker and Robert W. Hickman awarded contract to erect store building; brick.

Tenn., Memphis.—Frank Colosimo awarded contract to Jones Bros., Memphis, to erect store and apartment building at 268 Vance Ave.; cost \$9050.

Tex., Corpus Christi.—John Jordt awarded contract to Gordon-Jones Construction Co., San Antonio and Corpus Christi, Tex., to erect store building; 50x200 feet; two stories and mezzanine; fireproof; electric lighting; electric elevator; cement roof; cost \$23,812; plans by H. T. Phelps, San Antonio, Tex.; recently noted. (See "Machinery Wanted.")

Tex., Big Wells.—H. W. Carnahan awarded contract to George T. Perry, Big Wells, to erect store recently noted; 25x100 feet; ordinary construction; gasoline lighting; cost \$4000; plans by A. B. Purinton, Big Wells. (See "Machinery Wanted.")

Tex., Rockdale.—B. Y. Aycock awarded contract to erect two brick business buildings.

Va., Roanoke.—Bartlett Bolling awarded contract to A. J. Marshall, Roanoke, to erect store; 85x58 feet; brick; asbestos roofing; cement floors; cost \$8000; plans by Bates & Hutchinson. (Recently noted.)

THEATERS

Ky., Pineville.—Pineville Building & Amusement Co.'s structure will be two or three stories; 75x125 feet; ordinary construction; steam heat; electric lighting; Carey roofing; plans by C. C. and E. A. Weber, Cincinnati, O.; contract recently noted awarded to W. M. Jones, Barboursville, Ky. (See "Machinery Wanted.")

Tex., Teague.—Tait & Co., 608 14th St. Washington, D. C., awarded contract to Jeans & Johnson, Teague, to erect opera house; cost \$12,000. (Recently noted.)

WAREHOUSES

Md., Baltimore.—Eben B. Hunting, 829 Equitable Bldg., has plans by and awarded contract to Edward L. Walsh, 22 Clay St., Baltimore, to erect two warehouses on Gay St. near Water St.; 22x84 and 33x84 feet; three stories; fireproof; cost \$12,000 each.

Md., Baltimore.—William D. Gude, 2-6 E. Perry St., has plans by and awarded contract to Charles Milske, 232 N. Chester St., Baltimore, to erect warehouse on Calvert near Water St.; three stories.

Okla., Muskogee.—Muskogee Wholesale Grocery Co. awarded contract to Rooney & Culp, Muskogee, to erect warehouse; 50x150 feet; four stories and basement; fireproof construction; steam heat; freight elevator; gravel and tar roof; cost \$40,000. (Recently noted.)

Ala., Birmingham.—J. M. Dewberry of Birmingham is quoted saying that the Birmingham, Ensley & Bessemer Railway Co. (the Tidewater proposition) will complete its line by July 1 from East Lake to Birmingham, and that the Bessemer extension will be arranged soon after; also that the contemplated extension would certainly be constructed to Tuscaloosa. Another report says that the line to Gadsden will next be built. The dummy line from Tuscaloosa to Holt is to be electrified. J. H. Morris of Morris Bros., bankers, Philadelphia, and others are interested.

Ala., Irondale.—A mass meeting has been held and an executive committee, consisting of J. W. Fortenberry, W. J. Cadwell and Luke Ellard, appointed on a proposition to build a railroad from Irondale to Gate City, about one mile.

Ala., Dothan.—Local people are reported organizing for the construction of a railroad from Dothan, Ala., to Marianna, Fla., 45 miles, via Cottonwood, Ala., and Malone, Fla. The Board of Trade at Dothan may be able to give information.

Ala., Tuscaloosa.—The Tuscaloosa Mineral Railroad Co. is reported to have ordered the construction of an extension to Holt, 2½ miles. F. G. Blair of Tuscaloosa is president.

Ala., Warrior.—The Louisville & Nashville Railroad has let contract to Dunn & Lallande Bros. of Birmingham for a branch seven or eight miles long from Warrior to coal lands owned by Belton Gilreath.

Ala., Woodward.—The Woodward Iron Co., says a report, will build a railroad connecting its plant at Woodward, its mines at Dolomite and its newly-acquired properties at Mulga and Short Creek. It is expected that \$50,000 to \$100,000 will be spent.

Ark., Forrest City.—The Rock Island lines, it is reported, will raise tracks six feet from Madison to Memphis, and will also build second track between those points. J. B. Berry, Chicago, Ill., is chief engineer.

Ark., Pine Bluff.—The Pine Bluff, Sheridan & Southern Railway Co. has been incorporated with \$125,000 authorized capital, of which \$32,000 is subscribed, to build a railroad from Sheridan to Mannville, Ark., 13 miles, and to lease the track of the St. Louis, Iron Mountain & Southern Railroad between Sheridan and Pine Bluff; incorporators, J. F. McIntyre, R. R. McIntyre and R. A. McIntyre of Pine Bluff, Ark.; Fred, Mann of Henderson, Ky.; W. H. Garand of Little Rock, Ark.; David Mann of New Madrid, Mo., and C. K. Elliott of Pool, Ark.; also Joseph Hamilton, Joe Lybrand, J. F. Butler, V. A. Ashcroft, A. Shackelford, Ed. Hamilton and Wm. Poole.

Fla., Dunnellon.—Wade, Clower & Waters, contractors for the extension of the Atlantic Coast Line from Dunnellon to Thomasville via Otter Creek, Oldtown, Perry and Monticello, are reported to have more than 400 men employed. The roadbed is being prepared wide enough for two tracks.

Fla., Ocklocknee.—An officer of the Tallahassee & Gulf Railroad Co. is quoted saying that while track is built on 12 miles of its line, which is to connect Norfleet's Sliding with Jackson Bluff, Oakgrove and Mekasel, the plans are for an extension to Carrabelle, 40 miles. J. H. Norfleet of Ocklocknee, Fla., is president.

Fla., Tampa.—Eugene E. West of Jacksonville, president of the Ellaville, Westlake & Jennings Railway, is reported elected president of the Atlantic, Okeechobee & Gulf Railway Co., succeeding H. C. Ferriol of New Orleans, resigned. President West is authorized to obtain proposals to finance the plan from capitalists who have considered it, and construction contracts are expected to be let soon. Robert L. Riley of New Orleans and A. H. West of Jacksonville are vice-presidents. T. P. Bell of Tampa secretary, E. L. Highbee of Jacksonville treasurer. Hiram McElroy is chief engineer at Tampa. Survey is made.

Ga., Columbus.—The Columbus, Chattahoochee & Gulf Railroad Co., capital \$500,000, has been granted the charter applied for to build from Georgetown via Columbus to Atlanta, about 189 miles. Incorporators: John D. Little of Atlanta; Josiah Flournoy, J. Johnson Williams, L. H. Chappelle, Arthur Bussey, P. J. Williams, L. F. Humber, Henry R. Goetichius, T. T. Miller and E. P. Owsley, all of Columbus, Ga.

Ga., Jacksonville.—J. C. Willcox of Jacksonville, Ga., says that the McRae, Jacksonville & Northern Railroad Co. proposes to build a line from Jacksonville via McRae to

Dublin, Ga., 60 miles. Contract not let. Max L. McRae of McRae, Ga., is president.

Ga., Hinesville.—Contract for the construction of the Flemington, Hinesville & Western Railway is reported let to N. D. Hewitt of Darien, Ga., and work has begun from McIntosh, on the Atlantic Coast Line, via Flemington to Hinesville, five miles. J. B. Way is president.

Ky., Glasgow.—Major W. A. Calhoun of Buffalo, N. Y., is completing survey plans for the construction of the electric interurban railway from Glasgow to Hodgenville, Ky., which will be built by the Indianapolis Construction Co. for the Kentucky Central Electric Railway Co., of which J. M. Richardson of Glasgow is president.

Ky., Henderson.—The Henderson Commercial Club is reported contemplating plans for the construction of an interurban railway from Henderson to the site of Dam 48, six miles.

Ky., Maysville.—Engineers are surveying for a railroad near Mt. Olivet, Ky., the line to run from Covington up the Licking River to a point in the eastern part of Kentucky. The Board of Trade may be able to give information.

Ky., Whitehouse.—Reported that the Chesapeake & Ohio Railway contemplates relaying the Big Sandy division with 80-pound rails. F. I. Cabell, Richmond, Va., is chief engineer.

Md., Hagerstown.—Reported that the Cumberland Valley Railroad will build a low-grade line from Hagerstown to Berkeley Station, about 14 miles. G. C. Koons is engineer at Chambersburg, Pa.

Mo., Kansas City.—The Kansas City Southern Railroad Co., it is announced, will build an extension of switching tracks on land between 4th and 5th Sts. and Broadway and May St. C. E. Johnston is chief engineer at Kansas City.

N. C., Henderson.—Survey is reported progressing for the proposed Virginia Eastern Carolina Railroad from Henderson to Castalia and other North Carolina points. J. C. Kittrell is quoted saying that the line is assured. G. D. Taylor of Castalia may also be able to give information.

N. C., Kinston.—The Kinston Terminal Co., which proposes to build a line from Kinston to Richlands, is reported organized thus: L. Hines, president; J. H. Canady, vice-president; E. W. Chadwick, secretary and temporary treasurer.

N. C., Maxton.—The Maxton, Alma & Southbound Railroad is expected to soon take up its plan for an extension from Bracey to Rowland, three miles. A. J. McKinnon, Maxton, N. C., is president.

N. C., Raleigh.—Lane Bros. Company of Alta Vista, Va., advise that they have contract for the Norfolk Southern extension, covering 23 miles of new work between Virginia and Colon, 7 miles of which are sublet to Fisher & Carozza of Baltimore; also new work between Raleigh and Caraleigh Mills, 3 miles, sublet to Waugh & Waugh of Orange, Va. Rest is revision of line between Colon and Troy. Other parts will also be sublet. H. L. Lane is at Hotel Raleigh, Raleigh, N. C., where bidders can find him; prompt action necessary; it is a rush job.

Okla., Alva.—The St. Louis, Bartlesville & Pacific Railway is reported to have made an offer to the town of Buffalo, Okla., to extend there for a bonus of \$75,000. Address Miami, Okla.

Okla., Miami.—Frank W. McCabe of Memphis, Tenn., is reported in charge of construction on the Missouri, Oklahoma & Gulf Railroad at Miami, and says that work will begin as soon as weather permits. Engineers are staking out the yards. Daniel Morris of Shreveport, La., is also reported to have a contract.

Okla., Oklahoma City.—An official letter says that the Santa Fe is not prepared to announce plans for track elevation through Oklahoma City. This refers to a late report. C. F. W. Felt, Topeka, Kans., is chief engineer.

Okla., Pryor Creek.—The Pryor Creek Commercial Club is reported to have taken up the old plan of the Cherokee Central Railway for a line from Caney, Kans., to Pryor Creek and other points in Oklahoma, including Nowata and Tahlequah. J. A. Quinn of Pryor Creek may be able to give information.

S. C., Spartanburg.—Concerning report that the Southern Railway would build second track from Spartanburg to Greenville, S. C., an official letter says that surveys are being made for that purpose, but it is not known when the work will be authorized. Several surveys have been made in the last two or

three years. W. H. Wells, Washington, D. C., is chief engineer of construction.

Tenn., Cleveland.—Eastern capitalists are reported planning the construction of a railroad from Cleveland to Ocoee, on the Louisville & Nashville Railroad. Mayor Charles Mayfield of Cleveland may be able to give information.

Tenn., Memphis.—The Frisco system, says a report, will spend \$1,500,000 to reconstruct its tracts from Bridge Junction to Jonesboro, Ark., and from a point on the main line to Blytheville, Ark. This for protection against floods. F. G. Jonah, St. Louis, Mo., is chief engineer of construction.

Tenn., Mt. Pleasant.—The Middle Tennessee Railroad, says a report, has operated its first train to Mt. Pleasant.

Tex., Bartlett.—A letter says that the Bankers' Trust Co. of Houston, Tex., contemplates financing the extension of the Bartlett & Western Railway from Bartlett to Cameron, 32 miles. Provision of the necessary capital is dependent upon satisfactory right of way and bonuses being secured. J. W. Jackson is president and general manager of the line at Bartlett, Tex.

Tex., Bryan.—A bonus of \$25,000 is reported subscribed for a railroad from Bryan through the Brazos Valley bottom lands. The Board of Trade may be able to give information.

Tex., Dallas.—Wm. Doran and H. L. Seay are reported saying that having received all subscriptions desired and also the endorsement of the Dallas Chamber of Commerce for their plan to build an interurban railway from Dallas to Greenville, Tex., the proposition will be taken up immediately with places along the route. Engineers will accompany the promoters.

Tex., Hillsboro.—The Hillsboro Board of Trade is reported to have closed a contract with W. J. McDaniel of Dallas for the construction of a standard-gauge railroad from Hillsboro to Whitney, 12 miles.

Tex., Jacksboro.—J. T. Witt, chief engineer, is reported rapidly completing survey for extension of the Gulf, Texas & Western Railway from Jacksboro to Salesville or Oran, where connection with the Mineral Wells & Northwestern Railroad is to be made.

Tex., San Antonio.—The San Antonio, Uvalde & Gulf Railway has awarded contract, it is reported, to the El Paso (Tex.) Bridge & Iron Co. to furnish the steel for four bridges on its line between San Antonio and Fowler, Tex.

Tex., Texas City.—H. B. Moore, general manager of the Texas City Terminal Co., is reported saying that it will build eight miles of additional tracks.

Va., Norfolk.—Raymond Dupuy, vice-president and general manager of the Virginia Railway, is quoted as denying recent reports from New York that it would build an extension to the Great Lakes. However, with respect to the new financing, it is in part to take care of the improvement of the existing line. There will be \$50,000,000 of bonds reserved for future work.

Va., Yorktown.—Rumored that the Chesapeake & Ohio Railway contemplates building a branch several miles long from Lee Hall to Yorktown, Va. F. I. Cabell is chief engineer at Richmond, Va.

W. Va., Bluefield.—Rumored that the Virginian Railway contemplates construction of an extension about 85 miles long into the Elkhorn coal fields of Kentucky. H. Fernstrom, Norfolk, Va., is chief engineer.

W. Va., Clarksburg.—Joseph Fucel, contractor for the Clarksburg & Northern Railroad, now building from New Martinsville to Middlebourne, is quoted saying that it will be completed and in operation not later than July 15; also that survey is being made for a further extension from Middlebourne to Shirley.

W. Va., Holden.—An official letter says that the Chesapeake & Ohio Railway has leased the Island Creek Railroad, and it has also acquired the capital stock of the Logan & Southern. It is not stated whether any extensions are to be made. F. I. Cabell, Richmond, Va., is chief engineer.

W. Va., Roncove.—The Iron Mountain & Greenbrier Railroad, 23 miles long, is reported purchased at a court sale by G. F. M. Hauck of Thos. J. Shryock & Co., Baltimore, and improvement may be made.

W. Va., Summersville.—Maps and profiles of the Gauley & Meadow River Railroad Co. are reported filed for a line from Belva, on the Gauley Branch of the Chesapeake & Ohio, along Gauley and Meadow rivers, to coal lands in Nicholas and Greenbrier counties. R. M. Baker and others, also of Huntington, W. Va., are interested.

STREET RAILWAYS

Ala., Birmingham.—The Birmingham Railway, Light & Power Co. is reported, will extend its Gate City line to Irondale, about one mile.

Ala., Tuscaloosa.—The Tuscaloosa Light & Ice Co. is asking franchise for an electric street railway, two miles to be built and operated within 15 months.

Ark., Little Rock.—C. J. Griffith, general manager, is quoted saying that the Little Rock Railway & Electric Co. will soon double-track the Highland Park line and make other improvements.

Ark., Pine Bluff.—William von Phul of New Orleans, representing Ford, Bacon & Davis, is reported going over the street railway in Pine Bluff concerning plans for reconstruction.

Ark., Fort Smith.—The Fort Smith Light & Traction Co. has been granted authority to build a steel viaduct in Van Buren for the approach to the Fort Smith bridge.

Fla., Tampa.—S. R. Maxwell is quoted saying that Fidelity Realty Co. expects to build a street railway on the island at Anna Maria Beach. Address, Tampa, Fla.

La., Baton Rouge.—The Baton Rouge Electric Co. is asking a franchise to build an extension into the southern part of the city.

Miss., Jackson.—The Jackson Railway & Light Co. is reported sold by S. T. Carnes

and Frank G. Jones of Memphis to Kelsey, Brewer & Co. of Chicago. Improvements may be made.

N. C., Asheville.—The Asheville Electric Co. is reported to have conveyed its property to the Asheville Power & Light Co., and the latter has provided for the issue of \$5,000,000 of 5 per cent. 30-year bonds, of which \$1,000,000 will be issued immediately and rest reserved for permanent improvements, some of which will be to the electric railway. H. W. Flemmons is vice-president and general manager.

Tex., Amarillo.—The Amarillo Street Railway, says a report, will soon make some important extensions.

Va., Charlottesville.—A letter says that the Charlottesville & Albemarle Railway (the street-car line in Charlottesville) has been sold to W. G. Matthews of Clifton Forge, Va., and John D. Livers of Lancaster, Pa., and Grotoes, Va., and that improvements will be made.

Va., Graham.—The Appalachian Power Co. of Bluefield, W. Va., is reported to have made a proposition to Mayor Sexton to extend the Graham line to Hockman, in the western part of the town.

Va., Richmond.—The Richmond & Henrico Railway Co., says a report, will build an extension to Montrose Heights and another to Oakwood. Still another extension may be made to Swansboro. A loop is likewise proposed.

feed-water heater capable of heating 1,000 pounds of water from 70 degrees Fahr. to 205 degrees Fahr. at atmospheric pressure; two 50-kilowatt 2300 to 6600-volt high-tension transformers; 12 low equivalent outdoor type 6600-volt lightning arresters; about 300 Class C white cedar poles 30 feet long, 6 inches top, complete, with crossarms, crossarm braces, porcelain insulators, insulator pins, etc.; 90,000 linear feet No. 8 wire, copper; 1000 linear feet 8-inch Class B and 150 linear feet 10-inch Class A cast-iron pipe; five Fink roof trusses, 40-foot span, 8-foot rise, complete, with purlins, etc.; 100,000 common vitrified building brick; 7300 fire-brick for boilers; 300 barrels Portland cement; 100 cubic yards sand; 150 cubic yards broken stone or gravel; certified check in amount of 10 per cent of total bid; plans and specifications are on file in office of City Clerk and in office of Benham Engineering Co., consulting and supervising engineer, 812-14 American National Bank Bldg., Oklahoma City, Okla.; usual rights reserved; T. A. Chesney, City Clerk.

Electric-light Plant, etc.—City of New Braunfels, Tex., receives bids until 10 A. M. May 22 for construction of electric-light plant and equipment, including oil engine, alternating current generator, exciter, switchboard, electric lighting regulator, transformer, turbine pumps, motors, starters and accessories; also electric lighting system and transmission line, including pole lines and wiring, to connect power-house with pump-houses at wells, all lamps, etc.; certified check for 5 per cent. of bid; plans and specifications on file at office of C. A. Jahn, Mayor, and of W. K. Palmer Company, engineer, 717 Dwight Bldg., Kansas City, Mo.

Electrical Machinery.—Greenfield Park Development Co., W. B. Brice, manager, Box 22, Wallace, N. C., wants prices on small dynamo from 150 to 300 lights, 16 to greater candle-power; also wire and other equipment for plant.

Electrical Machinery.—Farmers' Loose Leaf Warehouse Co. (Dr. J. W. Burns to be addressed), Carlisle, Ky., wants prices on power plant; will operate 130 incandescent light equipment.

Electrical Machinery.—American Propeller Co., 243 Hamburg St., Baltimore, Md., wants prices on electric motor.

Elevators.—A. Huber, Moultrie, Ga., wants prices on electric elevator, 4x5-foot platform, with carrying capacity for 1500 pounds; also wants prices on freight elevator for store.

Elevator.—John Jordt, Corpus Christi, Tex., wants prices on electric elevators.

Elevator Plant.—Treasury Department, office of supervising architect, James Knox Taylor, Washington, D. C. Proposals received at this office until 3 P. M. May 17, then opened, for hydraulic elevator plant in United States postoffice at St. Louis, Mo., in accordance with drawings and specifications, copies of which may be obtained at this office or at office of superintendent, St. Louis, at discretion of architect.

Fireless Cookers.—T. H. Verdel, Box 296, Elberton, Ga., wants addresses of manufacturers of or dealers in fireless cookers.

Floor Scraper.—J. H. Jamison, Williamson or Princeton, W. Va., wants prices on floor (electric preferred) scraper.

Furniture, etc.—Furniture Brokerage Association, Charleston, S. C., wants prices on furniture and floor coverings for Y. M. C. A. building.

Gas Engines.—Mars Aviation Co., J. C. Mars, president, 506 Gumbel Bldg., Kansas City, Mo., will use gas engines of 40 horsepower and more.

Glass.—W. E. Ward, Pineapple, Ala., wants prices on plate glass for store front at Beatrice, Ala.

Glucose.—Nicolas Georgiades, general commission and insurance agent, Constantinople, Turkey, wants addresses of manufacturers of glucose.

Grading.—Proposals received by Roland Park Co. until about May 6 for several sections of grading of about 4.5 miles of streets, several acres of lots, together with clearing and stripping of top soil; about 250,000 cubic yards of excavation; usual rights reserved; information for bidders and grading diagrams obtainable at company's offices at Roland Park, Baltimore county, Maryland.

Hardware, etc.—Balestra & Blinda, Amargura 11, Apartado 1330, Havana, Cuba, want to correspond with manufacturers of shoes, flour, hardware, butter and condensed milk with view to representation on commission basis.

Heating Plant.—A. Huber, Moultrie, Ga., wants prices on heating plant for five-story office and store building and three additional stores, 15x32 feet.

Heating Plant.—W. H. Crawford, Hotel Racine, Columbus, Ga., wants prices on heating plant for two-story apartment building.

Heating Plant.—W. E. Kennemur, Sulphur Springs, Tex., wants prices on hot-air furnace for 19-room dwelling.

Heating Plant.—Board of Education, A. B. Hill, secretary, Goodwyn Institute, Memphis, Tenn., receives bids until May 13 to furnish and install two smokeless furnaces under 150-horse-power boilers at Central high school; also remove any parts of present furnaces necessary to complete work; bids to be accompanied by complete specifications and certified check for 10 per cent. of bid.

Hoisting Engine.—Poured House Construction Co., I. Tepper, manager, 920 New York Ave., Washington, D. C., wants prices on hoisting engine. (See "Concrete Mixer, etc.")

Iron.—Wyatt Millstone Manufacturer Co., R. D. 2, Box 10, Salisbury, N. C., wants round iron for mill spindles; manufactures corn-grinding mills.

Iron.—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. May 21, and opened immediately thereafter, to furnish at Navy-yard, Washington, D. C., quantity of steel and pig-iron. Applications for proposals should refer to schedule 4511. Blank proposals furnished upon application to bureau. T. J. Cowie, Paymaster-General, U. S. N.

Kitchen Furniture.—J. M. McMichael, Charlotte, N. C., wants prices on kitchen furniture for summer hotel at Bridgecrest, N. C.

Labels.—John J. Thornton, Moundville, Ala., wants addresses of parties furnishing lithographed labels void of printing.

Leather.—W. M. Ritter Lumber Co., Mortimer, N. C., wants to correspond with firms handling second-hand belts or scrap leather for making leather aprons.

Lighting Fixtures.—W. E. Kennemur, Sulphur Springs, Tex., wants prices on electric-light furnishings.

Lime-Sulphur Machinery.—W. M. McCray, Staunton, Va., wants machinery to equip plant to manufacture lime and sulphur solution.

Linoleum.—H. W. Carnahan, Big Wells, Tex., wants prices on linoleum.

Locks and Dams.—Proposals received by Board of Drainage Commissioners, State of Florida, until 10 A. M. May 22, then opened, for construction of three concrete locks and wing dams in the drainage canals near south shore of Lake Okeechobee; map showing location and complete set of drawings and specifications obtainable from chief drainage engineer's office in Tallahassee, Fla., on payment of \$2; usual rights reserved; certified check for \$200; J. O. Wright, chief drainage engineer; J. C. Luning, secretary.

Locomotives.—See "Railway Equipment."

Locomotive.—Atlantic & Western Railroad Co., H. P. Edwards, general superintendent, Sanford, N. C., wants prices on 10-wheel locomotive, with 18 or 19-inch cylinders.

Lumber.—Raleigh Iron Works Co., Raleigh, N. C., wants immediate quotations on long-leaf pine and white pine for pattern-making.

Mill Work.—See "Building Materials."

Mining Equipment.—Kentucky River Stone & Sand Co., T. B. Ripley, manager, Lawrenceburg, Ky., wants prices on tow barges, sand pump outfit, gasoline boat and machinery for unloading sand and gravel from boat to hopper (traction derrick).

Naval Supplies.—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. May 21, and opened immediately thereafter, to furnish at Navy-yard, Norfolk, Va., quantity of naval supplies as follows: Schedule 4512, rubber mats; schedule 4513, iron chain cables, steel wheelbarrows; schedule 4514, copper sheet; schedule 4516, Venetian red; schedule 4517, copper tubing, brass sheet; schedule 4527, furnishing and installing storage tank for alcohol. Application for proposals should designate schedules desired by number. Blank proposals furnished upon application to navy pay office, Norfolk, or to bureau. T. J. Cowie, Paymaster-General, U. S. N.

Naval Supplies.—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. May 21, and opened immediately thereafter, to furnish at Navy-yard Charleston, S. C., etc., a quantity of naval supplies as follows: Schedule 4530, steam road roller; schedule 4523, mineral oil; schedule 4526, window and ventilator screens. Applications for proposals should designate schedules desired by

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

Air Compressor.—Harris Granite Quarries Co., Salisbury, N. C., wants gasoline-driven air compressor about 150 cubic feet capacity.

Air Compressor.—Wilmington Iron Works, Wilmington, N. C., wants prices on new or second-hand air compressor.

Bents.—See "Mining Equipment."

Bridge Construction.—H. A. Skeggs, Mayor, Decatur, Ala., receives bids until 8 P. M. May 7 for furnishing material and constructing two reinforced concrete bridges over Courtland and Danville Rds., respectively; former to be 28-foot span, with 16-foot driveway; latter, 20-foot span, with 20-foot driveway and two 4½-foot sidewalks; plans and specifications on file with City Engineer; certified check, \$300 and \$300; E. W. Collier, City Clerk.

Bridge Construction.—Bids will be received at clerk's office, Independence, Va., until noon May 11 to construct steel bridge over Elk Creek in Grayson county; plans and specifications on file at office of clerk and of P. St. J. Wilson, State Highway Commissioner, Richmond, Va.; certified check, \$250.

Building Materials.—James Lee Long, 90 E. 7th St., Hopkinsville, Ky., wants catalogues and samples of building materials.

Building Materials.—J. M. McMichael, Charlotte, N. C., wants prices on plumbing, marble, tile and terrazzo floors, iron and concrete stairways, enclosed elevator shaft, plate-glass and copper-covered window frames.

Building Materials.—Farmers' Loose Leaf Warehouse Co. (Dr. J. W. Burns to be addressed), Carlisle, Ky., wants prices on 300,000 feet of dimension lumber and flooring, composition roofing and 216 4x4 skylights.

Building Materials.—McKeel-Richardson Hardware Co., 153 Main St., Washington, N. C., wants catalogues, cuts and best jobbers' prices on hardwood flooring, mantels and tiling, bathroom tiling, hard wall finish, roof slate, wood fiber, electric-gas fixtures, porch columns, doors and windows.

Building Materials.—See "Railway Construction Materials."

Building Materials.—Charles F. Childress, 730 General Taylor St., Dalcour, La., wants prices on four-room dwelling.

Building Material.—Graham Mattress Co., Graham, Va., wants prices on building material for mattress plant.

Building Materials.—A. Huber, Moultrie, Ga., wants prices on roofing of various kinds, windows and doors and sprinkler system.

Canning Machinery.—Dixie Brokerage

Co., Grand Theater Bldg., Wilmington, N. C., wants information on cannery establishment and prices on machinery.

Cars.—Atlantic & Western Railroad Co., H. P. Edwards, general superintendent, Sanford, N. C., wants prices on two passenger cars, three 60,000 pounds capacity flat cars and one combination passenger and baggage car.

Cars.—See "Railway Equipment."

Cement, etc.—Weber Chinney Co., 352 S. Michigan Ave., Chicago, Ill., wants cement, sand and gravel, delivered at Atlanta, Ga., and Augusta, Ga.

Concrete Mixer, etc.—Poured House Construction Co., I. Tepper, manager, 920 New York Ave., Washington, D. C., wants prices on concrete mixer, with hoisting engine.

Condensed Milk.—See "Hardware, etc."

Corn Mill.—H. S. Ledbetter, Rockingham, N. C., wants corn mill with cleaning and bolting attachments; capacity, 15 to 20 bushels per hour.

Dryer.—J. J. Tallent, Dayton, Tenn., wants prices on fruit dryer.

Dumbwaiter.—W. W. Graham, 3601 Colonial Ave., Dallas, Tex., wants prices on dumbwaiter.

Electric Plant.—Suwanee Sulphur Springs Co., B. W. Helveston, president, Live Oak, Fla., wants prices on electric plant.

Electric Wiring.—W. M. Jones, Barboursville, Ky., wants bids on electric wiring for theater building at Pineville, Ky.

Electric-light Plant and Waterworks Materials.—Board of Commissioners, Wagoner, Okla., receives bids up to 3 P. M. May 14 for the following machinery and material: 150 horse-power and one 225 horse-power simple or tandem compound high-speed steam engines, with accessories complete (alternate bids for two-part slide or four-part Corliss valve gear); 100 K. V. A. and one 150 K. V. A. 2300-volt 60-cycle three-phase engine-type alternators; three horizontal return-tubular boilers, 72 inches by 16 feet, complete, with all appurtenances; one No. 12 gauge steel stack 42 inches by 80 feet, with breeching for boilers; five-panel switchboard for control of generators, feeders, street lighting and pump motors complete; two 25-horse-power 2300-volt 60-cycle three-phase induction motors, to be geared single reduction to triplex pumps, complete, with two three-pole S. T. non-automatic oil switches; two 250 G. P. M. (S. A.) vertical triplex pumps for 300-foot head, complete, with extension base; two boiler-feed pumps capable of 25 G. P. M. against 150 pounds pressure at 40 feet per minute piston speed;

number. Blank proposals furnished upon application to navy pay office, Charleston, S. C., or to Bureau. T. J. Cowie, Paymaster-General, U. S. N.

Paint Machinery, etc.—Lacquer All Manufacturing Co., Dallas, Tex., wants prices on paint-manufacturing machinery and raw materials. Address Weeden Green, secretary, Box 1691.

Paving.—J. B. Winslett, City Secretary, Dallas, Tex., receives bids until 2 P. M. May 6 to pave intersection of Pacific Ave. and Harwood St.; separate bids on following materials: Vitrified brick block, cross-rotted wood block, bitulithic, concrete curbs, concrete gutters and combination concrete curbs and gutters; certified check \$100; specifications on file with City Secretary.

Paving.—Hamilton County Road Commission, E. D. Bass, chairman, Chattanooga, Tenn., receives bids until 1 P. M. April 30 to improve Glass St., East Chattanooga, from Harrison Pike to Campbell St.; bituminous macadam, bituminous concrete and vitrified brick roadway; concrete curb and gutters; proposals will also be considered for any class of paving mentioned, upon which bidder will furnish his own specifications and otherwise comply with requirements of commissioners; specifications, blank proposal forms and plans may be seen at office of Road Commissioners; certified check \$500; Joe V. Williams, County Judge.

Paving.—Commissioners of Public Works, D. B. McKay, chairman, Tampa, Fla., receive bids until May 7 to construct sheet cement sidewalks along four lots; bids to be submitted separately on each lot; Allen Thomas, clerk.

Paving.—A. N. Splan, commissioner Department Streets and Sewers, Chattanooga, Tenn., receives bids until 10 A. M. May 6 to pave with vitrified brick Fort St. from 11th to 13th St. (paving district No. 113); blank proposal forms, specifications and blueprints furnished on application; certified check, payable to J. M. Payne, for \$250.

Paving.—T. S. Engineer Office, Galveston, Tex. Sealed proposals for constructing concrete sidewalk, brick pavement, concrete curbing and drains at Fort Travis Reservation, Port Bolivar, Galveston, Tex., received until noon May 31, then opened; information on application. Earl I. Brown, Major, Engineers.

Paving.—Proposals addressed to Board of Awards, care of City Register, will be received by City Register, City Hall, Baltimore, Md., until 11 A. M. May 8, to grade, curb and pave following streets: Contract No. 3, bituminous concrete, 4300 square yards, Belle Ave. from Garrison Ave. to western city limits, Contract No. 4, sheet asphalt, 8120 square yards, Denison St. from Clifton to Elgin Ave.; Windsor Ave. from Hilton St. to Garrison Ave.; Elgin Ave. from Denison St. to Garrison Ave.; Allendale St. from Clifton Ave. to Windsor Mill Rd. Contract No. 5, vitrified block, 8200 square yards, Garrison La. from Frederick Rd. to Baltimore St.; Pratt St. from Garrison La. 120 feet east; Catherine St. from Lombard to Baltimore St. Specifications obtainable from Commissioners for Opening Streets, Eugene E. Grannan, president, City Hall, where plans and profiles are also on file; deposit of \$5 required for each set of specifications.

Pecan Trees.—Crystal Lake Pecan & Stock Farm Co., H. Lee Brown, president, 923 Woodward Bldg., Birmingham, Ala., wants 2000 paper-shell pecan trees.

Piping.—Proposals, endorsed "Proposals for renewal of water piping," received at Bureau of Yards and Docks, Navy Department, Washington, until 11 A. M. May 25, then opened, for renewal of water piping in Barracks A, Naval Training Station, Newport, R. I. Plans and specifications obtainable on application to bureau or to commandant of naval station named. H. R. Stanford, Chief of Bureau.

Prospecting Machinery.—Bromide Mining & Milling Co., Earl N. Swan, secretary, Bromide, Okla., wants prices on prospecting machinery.

Pulverizing Machinery.—Kentucky River Stone & Sand Co., T. B. Ripy, manager, Lawrenceburg, Ky., wants prices on machinery to manufacture raw limestone dust for agricultural purposes.

Pump.—See "Windmill."

Pump.—See "Mining Equipment."

Rails.—Charlotte Rapid Transit Co., Charlotte, N. C., wants 350 tons 56 or 60-pound T relay rails; first-class condition.

Railway Construction Materials.—Suwanee Sulphur Springs Co., B. W. Helveston, president, Live Oak, Fla., wants material for building eight-mile railway line, and for general building and railroad construction.

Reservoir Construction.—City of Brownwood, Tex., receives bids until May 7 (postponed date) to construct earthen reservoir (estimated quantities 12,000 cubic yards); plans and specifications on file with City Engineer, H. B. Hardeman; certified check \$200; D. B. Andrews, secretary.

Road Construction.—Bids received at clerk's office, Boydton, Va., until noon May 7 to construct 15.6 miles macadam road and 79 miles frayed soil road in La Crosse, South Hill, Palmer's Spring and Boydton districts; plans and specifications on file at clerk's office at Boydton, with supervisors of each district and with P. St. J. Wilson, State Highway Commissioner, Richmond, Va.; certified check \$250.

Road Construction.—W. F. Muller, Richland County Supervisor, Columbia, S. C., receives bids until 10 A. M. May 17 to resurface road from city limits to Hyatt Park with artificially-bound macadam wearing surface; 7648 feet; width, 25 feet; present road is water-bound granite macadam; basis for submitting bids must be specified prices per square yard for artificially-bound macadam wearing surface (stating proposed thickness of surface and kind of stone to be used) for spiking up present road and reshaping and preparing it for wearing surface, and specified price per cubic yard for stone necessary to prepare and repair present road for receiving wearing surface; also unit prices for other items necessary to particular type of construction; also bids will be received for supplying artificial binder, road to be constructed by county forces; or bids may be made separately for binder and construction. For further information address W. F. Muller, County Supervisor.

Road Construction.—Randolph county, Roanoke, Ala., receives bids May 24 to construct nine miles sand-clay roads; W. S. Keller, State Highway Engineer, Montgomery, Ala.

Road Construction.—Pickens County Commissioners, Carrollton, Ala., receive bids until noon May 22 to grade and surface with sand-clay four miles of road; check \$400; W. S. Keller, State Highway Engineer, Montgomery, Ala.

Railway Equipment.—Pine Bluff, Sheridan & Southern Railway Co., J. F. McIntyre, president, Pine Bluff, Ark., wants 25 60,000 pounds capacity flat cars, one caboose and one 50 to 60-ton locomotive engine, with 50-inch drivers; all standard gauge; flat cars and caboose for M. C. B. inspection; locomotive equipped with all appliances and be tested by Government requirements.

Road Work.—Fulton Special Road District, Fulton, Mo., will let contract June 1 for 120,000 cubic yards excavation; W. R. Heagler, chief engineer.

Sand and Gravel.—See "Cement, etc."

Seating.—See "Soda Fountain Fixtures, etc."

Sewer Construction.—Sealed proposals, addressed to Bridges Smith, Clerk, Macon, Ga., received by sewer committee until noon May 28 for furnishing all labor and material and constructing about six miles 8, 10 and 12-inch sanitary sewers, with all manholes and flush tanks; certified check for \$500; plans and specifications obtainable by applying to J. J. Gaillard, City Engineer; usual rights reserved; R. S. Thorpe, chairman sewer committee.

Sewer Construction.—Baltimore (Md.) Board of Awards receives bids at office of City Register, City Hall, until 11 A. M. May 15 to construct section No. 3 of high level interceptor; specifications and plans may be obtained at office of Sewerage Commission, Calvin W. Hendrick, chief engineer, 904 American Bldg.; charge of \$5 for each specification and blueprint; certified check \$2000; approximate quantities, 1620 feet 42-inch cast-iron pipe, 1100 linear feet 10-inch cast-iron pipe, 810 linear feet 36-inch cast-iron pipe, 230 linear feet 24-inch terra-cotta pipe and five special manholes; Charles England, chairman Sewerage Commission.

Sewage Disposal.—T. T. Gilmer, Charlotte, N. C., wants information on sewage disposal for \$5000 residence in suburbs.

Shoelace Materials.—H. Wilensky & Sons Company, Box 976, Atlanta, Ga., wants addresses of manufacturers of textile goods and metal points for shoelaces.

Shoes.—See "Hardware, etc."

Slate.—Diehl Supply Co., Jonesboro, Tenn., wants to correspond with manufacturers of roofing slate.

Sprinkler System.—See "Building Materials."

Skylights.—See "Building Materials."

Soda Fountain Fixtures, etc.—H. W. Carnahan, Big Wells, Tex., wants prices on soda fountain fixtures, chairs, tables, etc.

Steam Plant.—W. J. Massee, president of Central Georgia Power Co., Macon, Ga., wires Manufacturers Record: "Now in market for machinery." (This refers to large steam plant he will build.)

Steel Lath.—Diehl Supply Co., Jonesboro, Tenn., wants addresses of manufacturers of steel lath.

Steel Hangers.—Roanoke Iron Works, Inc., Roanoke, Va., wants (for exclusive agency) jobbers' prices on steel hangers of different sizes; also wants quantity of these hangers to carry in stock; quote with freight allowed to Roanoke.

Stoneworking Machinery.—H. M. Frith, Nassau, Bahama Islands, wants saws, drills, operated by small horse-power, for working soft stone; cutting only; no polishing.

Structural Steel, etc.—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. May 20, then opened in public, for furnishing structural steel, rivets, galvanized conduit, electric cable, wire, fuses, sockets, plugs, dry cells, carbons, vulcanized red fiber, wire solder and wire clamps. Blanks and general information relating to this circular (No. 707) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York, and 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engineer offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; Chamber of Commerce, Quincy, and Commercial Club, Tacoma. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

Tables.—See "Soda Fountain Fixtures, etc."

Telephone Equipment.—Wm. Ferguson, care Mill Creek Telephone Co., Ceredo, W. Va., wants prices on telephone boxes, wire, brackets and insulators.

Trestle Construction.—Tidewater Power Co., Wilmington, N. C., asks lump sum bids to be in before May 15 on erection of concrete trestle across Banks Channel; rights reserved; for plans and specifications address A. B. Skelding, general manager.

Vault Doors.—H. W. Carnahan, Big Wells, Tex., wants prices on vault doors for brick vault.

Water-works.—T. T. Gilmer, Charlotte, N. C., wants information and prices on water pressure in house from deep well.

Water Meters.—City of Gadsden, Ala., wants prices on 200 to 500 water meters. Address M. E. Jones.

Water-Works.—City of New Braunfels,

Tex., receives bids until 10 A. M. May 22, then opened, for construction of water-works, including mains, laterals and all pipe lines, with specials, valves, hydrants and other accessories, two wells, wellhouses, tank and tower; certified check for 5 per cent. of amount of bid; plans and specifications on file at office of C. A. Jahn, Mayor, and at office of W. K. Palmer Company, engineer, 717 Dwight Bldg., Kansas City, Mo.

Water-works.—Sealed proposals received by Mayor and Board of Commissioners of Reidsville, N. C., until 8 P. M. May 21, then publicly opened and read, for laying about 5½ miles wood pipe; construction and equipment complete of pumping station containing two turbine pumps, capacity 400 gallons per minute against 212 feet head direct connected to three-phase 60-cycle 2200-volt motors; construction and equipment of mechanical filter plant, capacity 500,000 gallons per 24 hours; plans and specifications on file at Town Hall, and copies may be obtained at office of E. W. Myers, engineer, Greensboro, N. C., on deposit of \$3; rights reserved; Francis Womack, Mayor; L. H. Hardy, Jr., clerk.

Water-works.—See "Electric-Light Plant and Water-works."

Windmill.—R. L. Keisler, Gilbert, S. C., wants to purchase windmill and pump outfit.

Wiring Machinery and Wire.—Albert Felscher, Brenham, Tex., wants prices on barb wire machine and bed-spring machinery; also on galvanized-iron wire and bed-spring steel wire.

Woodworking Machinery.—Garner Lumber Co., C. E. Kuester, manager, Garner, N. C., wants prices on machinery for lumber finishing for house complete.

Woodworking Machinery.—American Propeller Co., 243 Hamburg St., Baltimore, Md., will receive prices on 32 or 36-inch hand saw, 15 planer (light); table saw, drill press, etc.; also shafting and electric motor.

Woodworking Machinery.—Barr & Doney Lumber Co., Camden, Ark., wants second-hand lumber trimmer, two saws, to trim from 6 to 16 feet.

Woodworking Machinery.—Panama Manufacturing Co., Malvern, Ark., S. F. Sherman, president, 635 McCallie Ave., Chattanooga, Tenn., will need wagon-making and veneer machinery.

Wood Fiber.—See "Building Materials."

Woodworking Machinery.—Mark Cooper, Laurel, Del., wants addresses of manufacturers of machines for making slat-ties for cotton-mill looms.

Woodworking Machinery.—J. F. Phelps, Appalachian Furniture Co., Bluefield, W. Va., wants prices on boilers, dry-kiln, blower system and general woodworking machinery.

INDUSTRIAL NEWS OF INTEREST

Weber Chimney Co.'s Expansion.

On account of the constantly increasing volume of its business, the Weber Chimney Co. has taken larger quarters at 1452-56 McCormick Bldg., Chicago, having removed from 209 S. State St. The company has commodious and well-appointed offices in the McCormick Bldg., where it will give prompt attention to all inquiries.

Gulf Coast Construction Co.'s Contract

A six-story reinforced concrete apartment building of 36 apartments containing two, three and four rooms each has been designed and plans completed and the construction work begun by the Gulf Coast Construction Co., Stewart Bldg., Houston, Tex. This building is for Mr. George Surkey of San Antonio, Tex. It will be steam heated and equipped with all modern improvements.

Jute Handling System.

The F. E. King Company of Norfolk, Va., has recently installed in the Union Cotton Bagging Corporation's factory in that city two of its collecting systems for handling jute, etc., which are reported to have proved very satisfactory. The F. E. King Company manufactures low-speed low-power dust-collecting systems, sheet steel smokestacks, heating and ventilating systems, etc.

Hughes' Deep Wells.

The following wells have been completed by the Hughes Specialty Well Drilling Co. of Charleston, S. C., and Plant City, Fla.: Two wells for Griffin, Ga., one 475 feet deep, yielding 250 gallons per minute, and the other 508 feet deep, yielding 200 gallons per minute; one well for Cullman, Ala., with a yield of 300 gallons per minute. This is the fourth well completed by this company for Griffin and the second for Cullman.

Holophane Co. in Cleveland.

The sales department of the Holophane Co., Newark, O., has been removed to Cleveland, where it occupies an entire floor of the Vickers Bldg., 60th St. and Euclid Ave. The new organization of this company, previously announced, will manufacture and sell the various lines of Holophane prismatic glass, Veluri, Iris, Holophane-D'Oiler Steel Reflectors and other specialties previously manufactured by this company and the Fosterla Glass Specialty Co., which was merged with it.

Bids for Building Materials.

Emory & Eisenbrey, chemical engineers, Philadelphia, are receiving bids for the reinforced concrete work and brick construction for the new plant of the North American Chemical Co., Urbana, O. The building is to be two stories, 117x32 feet, with engine and boiler room and shipping sheds separate. Bids are also being received for the necessary equipment, including a 100-horse-power slide-valve engine, two 125-horse-power boilers, coal pulverizers, conveying machinery, etc.

Kennedy Valves in the South.

Among the installations of valves and water-works materials made by the Kennedy Valve Manufacturing Co., Elmira, N. Y., many have been made in the South. These include valves, etc., for the Washington Water Department, Washington, D. C., for the Norfolk County Water Co., Norfolk, Va., and for the Public Hospital, Louisville, Ky., for which this company has the order for all the valves to be used. Other notable valve installations include those in the power equipment and plumbing of the McAlpin Hotel, in New York, one of the largest hotels in the world. The order has been received for the valves of the power equipment of the

New York State Educational Building at Albany, a notable architectural and engineering construction. Contracts closed with the Buffalo Water-works Department cover valves from 6 inches to 60 inches, and with the Chicago Water-works Department include a large quantity of valves from 16 inches to 36 inches. These contracts were secured in competition with the largest valve manufacturers in the country.

Sale of Big Manufacturing Plant.

Sealed bids will be received until June 1, 1912, for the purchase of the manufacturing plant, real estate and business of the I. & E. Greenwald Company, Cincinnati, O. This company manufactures the Greenwald standard steam engine, general transmission machinery, coal-washing and powder-mill machinery and gearing of all descriptions. The bids will be received by John H. Gibson, receiver, 720 E. Pearl St., Cincinnati. Detailed information regarding the sale will be found in our advertising columns.

Norman A. Hill's Headquarters.

Norman A. Hill, consulting engineer, has moved his headquarters from Baltimore to 43 Victoria St., Toronto, Canada. He has organized his business in such a way through local representation that various connections have been formed throughout the United States and Canada by which the services of his company as efficiency engineers may be supplied. This applies at present particularly to the cities of Baltimore, Philadelphia, Washington, Richmond, New York; Winnipeg, Manitoba; and Edmonton, Alberta.

American Builders in Mexico.

Marshall Miller, the Mexican manager for W. P. Carmichael & Co. of St. Louis, builders of reinforced concrete structures, has recently been in St. Louis making arrangements for the construction of a reinforced concrete office building at Tampico, Mexico, for Lord Cowdray, a leading member of S. Pearson & Sons, 25 Broad St., New York. The Carmichael Company built the Y. M. C. A. building in Mexico City, said to be one of the first reinforced concrete structures in Mexico. It has since built the Braniff Hotel and the Hotel Gante in that city.

Foreign Representation for American Specialties.

Wonham, Sanger & Bates, Inc., engineers, contractors and manufacturers' representatives, 39 Church St., New York, will send H. A. Goode on a trip through Argentina and Brazil for the purpose of representing specialties manufactured in the United States, leaving New York May 16. Manufacturers who wish to correspond with this company regarding representation in these countries may communicate with the New York office, from which they will receive full information regarding Mr. Goode's proposed trip.

The Miller Engineering Co.

Announcement is made that Charles Waldrich of St. Louis, Mo., has become associated with the Miller Engineering Co., engineers and contractors, Southern Trust Bldg., Little Rock, Ark. Mr. Waldrich has been for many years connected with the engineering departments of the Pennsylvania and Missouri-Pacific railways. This company constructs steel and concrete buildings, steam and electric railways, water-power plants, drainage and levee improvements, highways, bridges and industrial plants. It also acts as consulting engineer in colonial projects, physical valuation of properties, municipal improvements, etc.

Selling Corrugated Roofing by Weight.

Believing that the most equitable plan for selling corrugated and formed metal roofing and siding is to measure it by weight in the place of by area and gauge, the American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, announces that it has changed its selling plan on such products to the weight basis. On account of the position occupied by this company and its large tonnage output, its practice of thus selling corrugated sheets by weight is of particular importance, and it is believed that the roofing business will be materially benefited by the adoption of this plan.

Pittsburgh Gage & Supply Co.'s Contracts.

The contract for the installation of a large amount of piping work in the new plant of the Lackawanna Lumber Co., Vaughn, W. Va., has been let to the Pittsburgh Gage & Supply Co., Pittsburgh, Pa. The operations of this lumber company will be quite extensive, and the piping contract referred to not only includes the power-plant work, but pipe

lines to other milling machinery. Other contracts awarded the Pittsburgh Gage & Supply Co. include installations in the power plants of the McGregor Coal Co., McGregor, W. Va., and the Blue Grass Phosphate Co., Mt. Pleasant, Tenn.

New Types of Turbines.

The Terry Steam Turbine Co., Hartford, Conn., has recently placed on the market several new types of turbines. One of these is the Terry turbine-driven three-bearing generator set, made in sizes up to 25 kilowatts. Another is Type D turbine for pumps, blowers and generators, made in sizes up to 600 H. P., and running up to 1800 revolutions per minute. Another type is the vertical turbine made in sizes up to 125 horse-power. Type ZVC includes the smaller sizes up to 30 horse-power, after which type BVC applies up to 125 horse-power. These two types are designed for driving pumps and centrifugals.

Basic Mineral Co.'s New Factory.

In order to increase its railroad facilities and to meet the demand for its products the Basic Mineral Co. of Pittsburgh is building an additional factory at Springfield, O. The company's present plant is on the Pennsylvania Railroad, and in Springfield it will be on the New York Central. This will permit the company to reach the East and West on these two great trunk lines. This company is the originator of Keystone Thermal Flux. Among its products are Keystone Thermal, Keystone Thermo and Basic Flux for iron and steel, also Radio-Clarite, and the C. M. Miller Bronze Alloy Flux for brass melting and alloys.

Contracts for Building Material.

The contract for the ornamental terracotta in the 13-story Royster Bldg. at Norfolk, awarded to the Southern Building Material Co., Arcade Bldg., Norfolk, Va., is now being filled, and similar material is being furnished for a number of other buildings throughout Virginia and the Carolinas by this company. In addition to the rough texture brick which is being furnished under contract for the \$1,000,000 Union Station at Norfolk, about 20 other buildings are being furnished at the present time with this brick in various colors as required. This company supplies all kinds of building materials, particularly in the territory included in Virginia and the Carolinas.

Sale of Cottonseed-Oil Mill.

A complete cottonseed-oil mill, which has been operated for two seasons only, and is reported to have made good returns during operation, and which, owing to its favorable location, good railroad facilities and low freight rates, is considered an excellent plant, will be sold at public auction by the Receiver, Joe E. Carroll, at Beaumont, Tex., on May 14. This is the property of the Beaumont Cotton Oil & Refining Co., the mill having a crushing capacity of 120 tons of cottonseed per day. It is situated in the suburbs of the city of Beaumont, and the site contains nine acres of ground. The sale is to be made by order of the United States District Court. Further information regarding this sale can be obtained from the Receiver, Joe E. Carroll, Beaumont, Tex.

Clinchfield Coal Corporation's Power Stations.

In addition to its central power station, located at Slem, Russell county, Virginia, the Clinchfield Coal Corporation, Dante, Va., plans to install three substations within the next six months to be used in connection with its mining operations at Dante, each station to contain two 300-kilowatt motor generator units. The installation of these substations will require additional boiler capacity at the central power plant. The power plant at Slem was completed March 1, and consists of brick, concrete and steel buildings, concrete stack 250 feet high, and cooling tower built by the C. H. Wheeler Manufacturing Co., Lehigh Ave. and 18th St., Philadelphia; three vertical 400-horse-power Wickes water-tube boilers, manufactured by the Wickes Boiler Co., Saginaw, Mich.; two 1000-kilowatt Westinghouse-Parsons turbo-generating sets, and one 300-kilowatt motor generating set. The substation at Laurel is equipped with two 300-kilowatt motor generator sets and one 200-kilowatt Westinghouse-Parsons turbo-generator, and five 300-kilowatt Westinghouse motor generator sets have been purchased.

Burners for Crude Oil and Kerosene.

A burner which is claimed by the inventor to handle the heaviest crude-oil fuel or kerosene without smoke and with safety from explosion, and which can be attached to ordinary stoves, ranges and heaters, has been

invented and patented by A. D. Marcotte of Eunice, La. Mr. Marcotte is one of the proprietors of the Eunice Carriage and Machine Shop, manufacturer of evaporators, smokestacks and tanks and dealer in carriage and wagon material, hardware, steamfittings, plumbing supplies, etc. The company also installs boilers and engines. The inventor claims that at the present price of fuel oil, cooking on the largest range can be successfully done at about three-quarters of a cent per hour, and that the burner can be used in any stove or heater that burns wood or coal. Its successful operation is brought about by the proper mixture of air, oil and water. In the demonstration it was shown that when the water was cut off the smoke immediately formed soot about the lids of the stove, but as soon as the water valve was opened and the water entered the burner the smoke and carbon formation ceased. The manufacture of these burners will be extensively carried on by the Eunice Carriage and Machine Shop.

Recent Sales of Refrigerating Machinery.

Among the recent sales of ice-making and refrigerating machinery of the Ruemmel-Dawley Manufacturing Co., St. Louis, Mo., are the following: 300-pound "Apollo" ice cans to the Polar Wave Ice & Fuel Co., St. Louis; the St. Genevieve Brewing Co., St. Genevieve, Mo.; the Anheuser-Busch Brewing Association, St. Louis, Mo.; Carthage Ice & Cold-Storage Co., Carthage, Mo.; rivetless "Hercules" ice cans to the Caruthersville (Mo.) Ice & Light Co., Sutphin Ice & Cold-Storage Co., Trenton, N. J., Cumberland (Md.) Ice Manufacturing Co., the Kansas Ice & Storage Co., Salina, Kans., The Nevada Crystal Ice & Cold-Storage Co., Nevada, Mo.; "Vulcan" ice cans to Armour & Co., East St. Louis, Ill.; Merchants' Ice & Cold-Storage Co., San Francisco, Cal.; De Soto Dairy, Ice & Fuel Co., De Soto, Mo.; two 100-ton refrigerating machines, 60-ton ice-making plant and brine piping of the Wilhelm Griesner's patented internal direct cooling system for the Mutual Brewing Co., St. Louis, Mo.; "Block" type ammonia condenser, traveling crane with air hoist, piping for cylinders, etc., for the Moberly (Mo.) Artificial Ice & Cold-Storage Co.; also a number of "Flask" type steam condensers made of galvanized ingot iron were sold to various ice companies.

Megargel & Co.'s New Building.

The banking firm of Megargel & Co., which has long been identified with Southern progress, and which has made a specialty in railroad and public-service propositions throughout the Southern States, has erected a new building for its banking business at 25 Pine St., New York city. The building is three stories, built of Dover marble, and is occupied exclusively by this firm. The main banking-room and the bond department are located on the first floor, private offices and correspondence-rooms on the second floor, and on the third floor a room is fitted out for directors' meetings for the various companies in which this firm is interested. A large library, consisting of several thousand volumes of financial and statistical works, reports on railroad and industrial companies, etc., is provided on the third floor. The building is lighted throughout by electricity, has steam heat, prismatic lights, and is equipped with electric passenger elevator. Albrow & Lindberg, 481 Fifth Ave., New York city, are the architects, and Robert S. Pollock & Co. are the contractors for the building. Megargel & Co. are at present engaged in financing the building of the Gulf, Florida & Alabama Railway, which is being constructed from Pensacola, Fla., through Alabama, connecting with the Illinois Central and the Frisco near Jasper, Ala.

Pratt & Cady Branch Houses.

The rapid progress of the South and Southwest has created a considerable demand for various lines of machinery, equipment, etc., in the industries of these sections. Many companies have found it necessary from time to time to increase their facilities for supplying these demands. In this connection the Pratt & Cady Company of Hartford, Conn., manufacturer of valves, cocks and hydrants, Anderson patent couplings, etc., has organized a sales department and established its own branch houses in the larger centers, including Baltimore, New Orleans and Nashville, with local agents and salesmen covering the entire territory. Each of the branches is in charge of a resident manager. An ample stock of finished goods is carried at each branch, thus enabling the public to secure good service and prompt deliveries. The company is able to produce high-quality goods and place them upon the market at the lowest reasonable cost, for

which purpose the facilities for manufacture afforded by the extensive factories at Hartford are kept at a high standard, and it is stated by the company that these facilities will be in every way enlarged and improved as may be necessary. The triangle trademark of the Pratt & Cady Company appears on every article manufactured by the company.

West Virginia Coal Report.

The reports of the Four States Coal & Coke Co., Frick Bldg., Pittsburgh, of its earnings for the nine months ending March 31, and for the month of March, 1912, on sales of coal mined at Dorothy, W. Va., and Annabelle, W. Va., have been recently issued by the company. The report for the nine months' period shows a dividend of 6 per cent paid on the preferred stock of the company and a surplus of \$40,604. The Annabelle mines were placed on an operating basis March 1, 1912. The net profits from coal sales of the company, including the Annabelle mines, for this month of March were \$32,614.66; after deducting expenses the profit for the month is shown in the report as \$20,684.47, or at the rate of 20.7 per cent, per annum on the \$1,197,500 of outstanding preferred stock. At the annual meeting of the company recently held the following officers were re-elected: David G. Jones, president; E. F. Miller, vice-president and general manager; T. P. Jones, treasurer. A new issue of \$1,000,000 of capital stock will soon be made, and several additional plants will be constructed and new mines started. The output of these mines is sold by the Pittsburgh-Butte Coal Co., Frick Bldg., Pittsburgh, popularly known as "The Jones Interests."

Atlantic Diaphragm Pumping Engines.

A gasoline engine designed especially for pumping out trenches, foundations for buildings, piers, etc., known as the Atlantic Diaphragm Pumping Engine, is sold by the Harold L. Bond Company, 333 S. Atlantic Ave., Boston. This engine is described as strong, durable, compact and easily portable. It is stated that it takes the place of hand pumps at a saving of \$8 to \$14 per day of eight hours. Its efficiency and economy make it of particular importance to contractors, corporations and municipalities. It has been found to be readily adaptable to many kinds of work. It may be attached to sanitary diaphragm suction and force pumps for use by health departments, having a capacity of 3000 to 4000 gallons per hour. It is also adapted to prospecting and mining work and for contractors' use in filling tanks, water carts, or for elevating water for any purpose where a small quantity of water is desired. It is claimed that it will raise water containing sand, dirt, etc., without choking. It may also be attached to a double-action suction and force pump with five-inch brass-lined cylinder for pumping out drains and culverts, and also in mining operations. The Harold L. Bond Company makes a special offer in regard to making hand pumps more efficient. Full details and prices of regular equipments, together with this special offer, will be sent on request.

TRADE LITERATURE.

Damascus Bronze Co.'s Products.

Various forms of bronze and its uses in making good bearings, worm wheels, the wearing parts of locomotives, hydraulic feeding press die holders, etc., are described in the booklet issued by the Damascus Bronze Co., Pittsburgh. The percentages of copper and tin and the alloys with aluminum, nickel, lead, zinc, silicon and phosphorus used in the different forms of bronze, such as nickel bronze, phosphor-bronze, hydraulic bronze, etc., are noted.

"Bates" Electric Fans.

The "Bates" improved fans, manufactured by the D. L. Bates & Bro. Company, Dayton, O., for direct current, are described in a catalogue recently issued by the company. Its 21 years of experience in manufacturing electric fans is utilized in producing fans for ceiling, desk, wall or column, which it claims will consume as little current as any other fan made. Another catalogue, describing its water fans, belt-driven fans and supplies, has also been issued. The construction of this company's fans is shown in detail in the illustrations.

Portable Telephone Booths.

The demand for soundproof telephone booths has led the Western Electric Co., 463 West St., New York, to make extensive experiments and research study with a view of producing a practical soundproof booth

for telephone service. The result is a booth having double interchangeable walls with an air space between, which excludes outside noises. They are built of selected lumber and mounted on rubber cushions. Independent compartment booths having the outside appearance of one booth can be obtained. A complete line of these portable soundproof telephone booths is described in bulletin No. 1063, issued for free distribution by the company.

The Cincinnati Iron & Steel Co.'s Booklets.

"Clisco Led Kote," a material for roofing, composed of open-hearth steel with a coating of practically pure lead applied without alloy of tin or zinc, is described and illustrated in a booklet issued by the Cincinnati Iron & Steel Co., Cincinnati. This material is sold in sheets, or is made up into standard forms of roofing, cornices, siding, piping, skylights, window frames, doors, gutters, tanks, etc. It is claimed that it can be shaped or formed in any way without injuring the coating, and it is not affected by sulphuric fumes or atmospheric conditions. A price-list of the "Clisco" weldless steel boiler braces has also been issued.

The Gallon Buyers' Guide.

In presenting its Annual Catalogue and Buyers' Guide to highway officials and contractors the Gallon Iron Works Co., Gallon, O., gives a statement of the success which its products have met with in the past five years. At first the company made cast-iron and corrugated culvert pipe, but in response to an urgent demand has added the manufacture of a line of road machinery, tools, etc. All of these products are illustrated and described in Catalogue No. 16, recently issued by the company. This catalogue contains information regarding road grading machines, drags, rollers, scrapers, plows, tractors, crushers, scarifiers, cast-iron corrugated culvert pipe, etc., and will be sent on request.

Biehl Hoisting Buckets.

The self-dumping and self-righting hoisting buckets for contractors and stevedores, manufactured by B. F. Biehl, 222 S. 2d St., Reading, Pa., are illustrated and described in a folder issued by the manufacturer. The Biehl bucket has earned a name by over 60 years of development and manufacture by its makers. Buckets are made for any capacity wanted and with both side and back catch. Other Biehl products are illustrated, together with price-lists, on a poster sheet which accompanies the folder. These products include hoisting tubs, barrows and tanks. Fittings of various kinds are made and general plate and sheet-metal work done in this shop. This folder will be sent on request, and estimates made for special work when required.

Roberts Standard Water Filters.

Water filters are now so extensively used and the value of pure water so universally recognized that the merits of any particular system of filtering are always of interest to persons responsible for supplying pure water. The Roberts Filter Manufacturing Co., Inc., of Darby, Philadelphia, has issued a catalogue which illustrates and describes its standard styles and sizes of water filters, with statements of the advantages and methods of installing and using them. Apparatus will be designed to meet the needs of unusual conditions requiring filters of special construction. The company prepares plans for filter plants without charge, and will give information regarding any of its filters, make recommendations and advise generally regarding filter installations. Best results are assured by unreserved guarantees in every instance. Catalogue No. 12 and other information will be sent on request.

Universal Household Tool Chest.

A tool chest 23 inches long and 14 inches high, which contains over 40 complete tools for household and mechanical use, is manufactured by W. H. Colby, Chattanooga, Tenn. A booklet describing this tool chest, together with illustrations and price of the useful household tools included, has been issued by the company for distribution. This is known as the Universal Combination Household Tool Chest. It is made of kiln-dried, selected hardwood stained mahogany, and has a hard-oil finish. It weighs only 19 pounds, complete, and has many advantages which are apparent to the user of handy tools for all household repairs and other mechanical purposes. It is stated that all the tools in this combination are of high-grade standards, no poor-quality articles being included. Among them are bits and drills, chisels, a wrench, planes, files, hatchet, saw, small tools, pliers, dividers, spirit level, a full

nickel-plated 10-inch ratchet bit brace, which serves as the lifting handle for the chest, and many other tools.

Thompson & Co.'s Paint Specialties.

The high-grade paints, colors, varnishes, linseed oil, "Lin-O-Core" oil, Diamond prepared paints, etc., manufactured by Thompson & Co., North Side, Pittsburgh, Pa., are fully described and their advantages and qualities stated in the folders and booklets issued by the company. A large folder describing Diamond pure prepared paint contains 45 color samples, and also a guarantee for Diamond paint that it is made of the purest old-process linseed oil, pure white lead, oxide of zinc, best pigments, turpentine and linseed oil driers, and that no benzol, mineral water or other injurious adulteration is contained in its composition. The fact that this company was established in 1847 lends strength to its guarantee. A booklet, which is printed for distribution to manufacturers and other extensive users of paint, contains points of interest to those who prefer to buy their paints made to order in quantity. In this connection suggestions will be given and estimates submitted for the paint which is deemed best for the con-

ditions stated. Separate leaflets issued by the company treat of pure linseed oil, "Lin-O-Core" oil for use in foundries, "Tanco" for roofs and sides of buildings, paints for hot metal, for machinery enamels, protective paints for steel, also driers, thinners, japs, linseed oil, etc. These publications will be sent on request to the company.

OBITUARY.

Hugh Addison Reed.

Hugh Addison Reed, aged 58, one of the most prominent machine-tool men in Pittsburgh, died in his home, 1232 Sheffield St., North Side, on the morning of April 25. His death came as a great shock to his host of friends. At the time of his death Mr. Reed was president of the Baird Machinery Co., 123 Water St., Pittsburgh. At an early age he became interested in the business which he followed for more than 40 years. He was well known among engineers and mechanics of his city, as well as among the machine-tool builders throughout the country. He was a member of the Engineers' Society of Western Pennsylvania, of the Technischer Verein, and an active member of the Unitarian Church.

MOTOR VEHICLES AND TRACTORS.

New Elastic Automobile Wheel.

S. C. Hatfield, 712 Union Trust Bldg., Baltimore, Md., believes that he has solved the tire problem for automobiles by his invention of the elastic wheel. He removes the pneumatic tire from the outside rim of the wheel and places it in a smooth, specially prepared steel-protected channel of its own, so that the wear from friction against the road is eliminated. Mr. Hatfield is organizing a company to put this wheel on the market.

Buick Company's Fire Sprinklers.

The main plant of the Buick Automobile Co., Flint, Mich., contains a complete equipment of the Grinnell automatic sprinklers, manufactured by the General Fire Extinguisher Co., Providence, R. I., there being upwards of 30,000 of the sprinkler heads installed. As an illustration of the value of such installations, a small fire of unknown cause, which without this protection might have done considerable damage, was extinguished by the sprinkler system with a total damage of only \$30. The fire occurred in the shed used for storing small quantities of lumber and paper automobile covers.

"Mack" Truck Oiling Diagram.

A large-scale diagram of the chassis of the Mack motor truck has been made on cardboard sheets, in which are clearly indicated the various points which require oiling. Printed directions indicate the method of oiling different parts; which parts should have oil or grease; the frequency with which they should be applied in each case, etc. Certain precautions to be used in connection with oiling the machinery are stated. This oiling diagram will be sent to users and prospective users of trucks manufactured by the International Motor Co., 57th St. and Broadway, New York.

Moon Taxicabs in St. Louis.

After extensive tests the Missouri Taxicab Co., St. Louis, has finally adopted the Moon car, manufactured by the Moon Car Co. of that city, for its extensive taxicab service. In this test the question of efficiency and economy were thoroughly considered. The University Taxicab Co. of Chicago has also adopted the Moon car after similar tests. J. W. Moon, president of the Moon Car Co., states that while the Moon car is manufactured primarily for private use, it is being generally introduced for taxicab service, which is strong proof of the reliability and good service qualities of the car.

Bids for Motor Apparatus.

An indication of the increasing demand for motor fire equipment in the South is shown in the bids noted in our advertising columns by the city of Shreveport, La. These bids call for one auto combination chemical hose wagon and engine with not less than 50 horse-power, hose wagon body capacity of 1200 feet of 2½-inch hose; one 50-gallon chemical tank, with 200 feet of ¾-inch hose, together with the usual fire and auto equipment, including speedometer; two auto combination pump engine hose wagons, fully equipped; one tractor to pull a 75-foot Sea-grave aerial truck; one motor car for the chief of the fire department; 2000 feet of 2½-inch rubber-lined, double-jacket standard fire hose, with standard screw couplings attached and guaranteed pressure up to 350 pounds.

tion from the city authorities of Pensacola, and it is for operation over a large district of that city. The tanks are also made in capacities of 400 and 450 gallons when required.

The Birmingham Auto Show.

Among the principal exhibits at the Automobile Show recently held at the Fair Grounds, Birmingham, Ala., four vehicles exhibited by the Great Southern Automobile Co. of Birmingham attracted much attention. These cars are manufactured by the company under the management of E. F. Enslin, Jr., and the name "Great Southern" is given to its cars. This Automobile Show was promoted by the Business Men's League, local automobile owners and dealers, in connection with the aviation meet which was held at the same time. Over 100 cars, valued at over \$500,000, were exhibited. The Ohio Motor Car Co. of Cincinnati presented an attractive exhibit under the charge of their representative sent from Cincinnati. The truck exhibit of the Packard Motor Car Co. of Detroit attracted much attention, as also did the two automobiles exhibited by the same company. Other cars exhibited by local automobile interests included the following: The Highland Garage exhibited the Marmon, Buick, American, Olds-Mobile, Regal and Broc electric; the Brownell Auto Co. exhibited Ford motor cars; the Birmingham Motor Co. exhibited Pierce-Arrow, Chalmers, Detroit and Rauch-Lang electric; the Drennen Company exhibited the Overland, Stevens-Duryea and Peerless cars, including Peerless trucks; the Matthews Auto Co. exhibited the Kirt and Firestone-Columbus; the Studebaker Corporation exhibited the E. M. F. and the Flanders cars; the Drennen Motor Car Co. exhibited the Cadillac cars; the Cox Motor Sales Co. exhibited the Marion, Apperson and Ohio cars; Charles Denegre exhibited Packard and Hudson cars; the Birmingham Garage exhibited the Thomas and Oakland cars, and the Birmingham Auto Co. exhibited the Lozier and Hupmobile. Many sales were reported as made during the exhibition, and the great interest of this and surrounding sections in the subject of automobiles and motor trucks was apparent throughout the exhibit.

Truck Designs in Technical Schools.

A noteworthy indication of the great interest being manifested in commercial vehicles and their development is that of the recent action of the Rensselaer Polytechnic Institute of Troy, N. Y., as mentioned in a letter from Prof. R. L. Streeter, assistant professor of mechanical engineering, to A. W. Robinson, truck sales manager of the Locomobile Co. of America, Bridgeport, Conn., relative to the establishment of a course in motor-truck design in that institution. Professor Streeter for some time past has been very desirous of including such a course in the curriculum of the school, and was recently granted the necessary authority by the governing board. This course, which aims to be very thorough in its work, forms



AUTOCAR CO.'S MOTOR SPRINKLER.

at a great saving of time and labor. The amount of water spread over the road is regulated by the driver by means of levers. A great advantage of this equipment is that it does not puddle the roads as a slow-moving cart would, but it wets the ground thoroughly and covers the route in much less time than the horse-drawn vehicle. Its construction has met with considerable satisfac-

a part of the regular mechanical engineering course, and is restricted to those students who are in their senior year. The work of the course embraces many problems of interest to the truck designer. He is given data indicating the kind of load to be carried, speed on high gear, grade of road, kind of road, etc., from which he works out the tractive force necessary per ton and the

probable weight of the car. His next step is to ascertain the brake horse-power of the engine, and in order to do this he is required to decide on a type of drive and to work out its efficiency. After the power of the engine is obtained he decides on a type of clutch, this being designed to take the maximum power of the motor. The shaft and transmission are then considered, each part being carefully designed to take the greatest load which will ever be put upon it. After the driving gear back to the rear sprockets is completed, the springs are taken up, after which the frame is designed. Supplementary to the practical work of the course, a series of lectures is given to acquaint the students with the latest practice in motor car and truck designs.

Army Motor Trucks and Ambulances.

There is an increasing appreciation of the motor truck as a factor in army transportation as shown by the plans to continue the work at Sparta, Wis., and at Dubuque, Ia., in connection with the army maneuvers. Capt. A. E. Williams, U. S. A., has just completed a trial trip with four vehicles from Washington to Fort Benjamin Harrison, Indiana, and he states his belief that motor trucks, properly constructed, will be able to go wherever troops may be sent over roads. He bases this conclusion on his experience on the recent 3000-mile test, which he states was through some of the worst roads he has yet encountered. The four motor ambulances made for the Army Medical Department by the Mals Motor Truck Co. of Indianapolis have been delivered at Fort Leavenworth, Kans. One of the striking features of this type is the large size of the wheels, which carry five-inch dual tires. These wheels were specified by the Army authorities in order that they could always be assured of good traction in field duty. These ambulances are equipped with adjustable seats so that they can be used for transporting passengers about the forts, as well as for ambulance service. It is expected that the Medical Department will acquire six of these cars during the present year.

Motorists' Map of Virginia.

A new automobile road map of Virginia has been issued by the American Automobile Association Touring Information Bureau, 437 Fifth Ave., New York. The map shows both the main highways in the State and the through lines of travel from Philadelphia, Baltimore, Washington, Reading, Harrisburg, Lancaster, Hagerstown and Cumberland, Maryland, into Virginia by way of Washington and Hagerstown. The main route down the Shenandoah Valley and the corresponding route from Washington through Charlottesville, Lynchburg and Danville to the South are shown. A special feature is a strip map of the route from Richmond to Washington, which passes through the neighborhood of many battlefields. This route was laid out in December, 1911, by the Touring Information Bureau. Since that time there has been aroused much interest in making such improvements along this line as will add to travel. It is stated that the Chamber of Commerce of Richmond is considering a fund of \$75,000 towards the \$200,000 which, it is estimated, permanent improvement of this road would cost. The map shows the principal connections with West Virginia and North Carolina roads, and there are also detailed inset maps of the principal cities in the State.

New Electric Vehicle Company.

The Buffalo Electric Vehicle Co., which was organized recently with a capital of \$1,000,000, has just announced its first permanent list of officers, as follows: President, Samuel J. Dark, secretary of the Buffalo Dredging Co., secretary of the German Rock Asphalt Co. and director of the Commonwealth Trust Co.; vice-president, A. A. Landon, superintendent of manufacturing of the American Radiator Co.; vice-president, in charge of sales, William A. Morgan, district manager of Swift & Co., president of the Buffalo Taxicab Co. and director of the Buffalo Copper and Brass Rolling Mills; treasurer, Harry Gates, first vice-president of the Buffalo Union Furnace Co., treasurer of the Lafayette Hotel Co. and vice-president of the Commonwealth Trust Co.; secretary, Alfred W. Thorn, president of the Thorn Cement Co. and director of the Commonwealth Trust Co. The new company has purchased the capital stock of the Babcock Electric Carriage Co., the Clark Motor Co., the Buffalo Automobile Station Co. and the Buffalo Electric Carriage Co. The preferred stock of the company has been underwritten in Buffalo, and a large amount of it has been sold there. The combination of plants gives the new company a factory for manufacturing electric pleasure and commercial vehicles

and one of the finest garages in Buffalo. The company is strictly a Buffalo institution, and through its purchased companies it is now doing business practically all over the United States.

New Emerson Engine Plant.

Referring to its new plant, the Emerson Engine Co. of Alexandria, Va., writes to the MANUFACTURERS RECORD as follows:

"The property purchased occupies one city square facing five docks on the Potomac River, with a depth of water of 26 feet. The walls of the building have been erected on a foundation of stone. The building will be two stories in height. The machine shop will be 131x115 feet, with two dockage buildings 50x100 feet. The entire structure, with the exception of the walls, will be of steel and of fire-proof construction. The company will build, in addition to the well-known line of Emerson engines, steam turbines from 100 horse-power to sizes sufficient to run an ocean-going vessel. The turbines are entirely new in their principle, and have been thoroughly tested and tried out in some of the large plants of this country and are without the usual veins found in other turbines and are free from the clearance trouble that accompanies turbines having veins, and will possess the feature of being reversible and occupy but one-sixth the space per horse-power of the general type of steam turbine. Heavy motor trucks will also be one of the products of manufacture. The company will employ about 500 men. The plant is expected to be in full operation in four months. In addition to the present equipment of tools there will be added automatic machines for producing small parts, such as pistons, etc.; boring mills up to 60 inches; grinding machines capable of grinding crankshafts up to 16 inches throws 8 feet between centers; traveling crane with 45-foot span; in fact, a full equipment such as found in plants for turning out turbines and engines in our line."

Chattanooga Iron & Coal Co.

The Chattanooga Iron & Coal Co. of Chattanooga will reorganize and resume the development of its various coal and iron mining and iron manufacturing properties, intending to utilize them to their utmost possibilities. C. E. Buck of Chattanooga has stated details of the reorganization plan, and that several hundred thousand dollars will be expended for improvements and new machinery at the Chattanooga furnace and the coal, iron, limestone and rock plants. The furnace is to be blown in within two months and have a daily capacity of 225 tons of iron, and it is contemplated to construct by-product coke ovens costing \$750,000. The properties include the furnace, extensive coal and timber lands at Dunlap, Tenn., rock and limestone quarries at Ironco, in Walker county, Georgia, near Chattanooga, and iron-ore mines at Estelle, in Walker county. These mine and timber properties have been operated by the Southern Iron & Steel Co. of Birmingham, and the Chattanooga company has arranged to develop and operate them independently. A reorganization committee has been appointed, consisting of the Equitable Trust Co. and its president, Alvin W. Krech, both of New York, and Alexander W. Chambliss of Chattanooga. Mr. Buck will be active in the management after reorganization, and others interested will be Messrs. Oakleigh Thorne of New York, James D. Lacey of New Orleans and Chicago, and De Camp Bros. & Yule of St. Louis. Supplementing the foregoing, Mr. Buck wires the MANUFACTURERS RECORD: "Now overhauling and increasing efficiency of all plants; expect to be making iron in July; will operate as receiver until legal proceedings are terminated, in about 60 days; will then reorganize."

ated, in about 60 days; will then reorganize."

OKLAHOMA FARM RESOURCES.

Many Opportunities for Agricultural Development.

[Special Cor. Manufacturers Record.]

Oklahoma City, Okla., April 12.

Charles N. Gould, the eminent geologist of this city, is authority for the statement that more than 65 per cent. of all the people of the State of Oklahoma are engaged in agricultural pursuits in some form or another. The inducements to agricultural life are found in the mild winter climate; the richness and variety of the soil and the ready market for the staple crop and truck garden products. There are a number of soil areas within the State that are rich rolling prairie land, the rougher mountain regions lying near the sandstone hills and gypsum hills.

However, there is very little of Oklahoma that may not be successfully cultivated. At the present time not more than one-third of the agricultural resources of the State have been developed, and this is especially true in the eastern section, where the greater part of the land belongs to the citizens of the five civilized tribes of Indians.

Corn, wheat and oats are the most important grain crops raised in Oklahoma. Kafir corn has a sturdy growth, and will withstand the ravages of a long drouth where all else fail, and is the dependable crop that can always be marketed. Indian corn has the widest range, being produced abundantly in all sections of the State except on the high plain in the extreme western part. Oklahoma cotton is noted for the superior quality of its fiber, and for that reason is in great demand. Nearly all of the cotton raised in the State is exported to European ports, going by the way of Galveston. Alfalfa is a great hay and forage crop, and is grown in every county in the State. From three to five cuttings are grown a year, valued at more than a million dollars. Prairie hay baled in the field is worth \$3,000,000 a year to the State.

The soils of Oklahoma are productive of a variety of fruits, such as apricots, grapes, cherries, pears, plums and quince. The staple fruits are peaches and apples. The income from the fruit orchards of Oklahoma is more than two million dollars a year. Potatoes are grown for home use in every county in the State, and many fortunes have been made by small farmers in this one particular line. Hundreds of carloads of sweet potatoes are shipped to Northern and Eastern markets, and the value of the potato crop is estimated at \$1,500,000 annually. Of the minor crops, onions are extensively cultivated in many localities. Castor beans are an important source of income in the central and western counties. Watermelons and cantaloupes are raised chiefly in the Sand Hill region, while peanuts are cultivated in many places and flax is also raised.

Oklahoma ranks high in the production of live-stock, especially cattle, hogs, horses and mules. Dairying is becoming an important industry. The cheap forage and grain, pure water and good roads of Oklahoma all combine to make dairying an important industry. The dairy products amount to more than \$2,750,000 annually. With the abundance of natural food, poultry raising is carried on successfully in all parts of the State. The value of the poultry and eggs produced in Oklahoma each year is approximately \$3,500,000. The great need of the Oklahoma farmer is a home market. With a soil and climate that will produce a number of salable crops he is compelled to raise only those products that can be shipped to other States.

CHARLES E. TRIMBLE.

FINANCIAL NEWS

Review of the Baltimore Market.

Office MANUFACTURERS RECORD,

Baltimore, Md., May 1.

The Baltimore stock market was the scene of considerable activity in United Railways and G. B. S. Brewing issues during the past week, the former gaining strength and some advances on the declaration of the dividend of 75 cents per share on the common stock and the latter on the improved prospects of the company under the reorganization plan. The rise in G. B. S. issues was considerable, as the record of sales shows.

In the trading United Railways common sold from 21 1/2 to 23 1/2, reacting to 23, with last sale at 23 1/2; do. income bonds, 90 1/2 to 96 1/2; do. funding 5s, 89 1/2 to 90 1/2; do. notes, 100 1/2 to 101 1/2, with last sale at 101 1/2; United 4s, 85 to 85 1/2; United Electric Light & Power 4 1/2s, 94 1/2; Consolidated Gas, Electric Light & Power common, 111 to 113; do. preferred, 111 to 112 1/2; do. 4 1/2s, 90 1/2 to 90; Consolidated Gas 5s, 109; do. 4 1/2s, 98 to 97 1/2; do. do. certificates, 99 1/2 to 99 1/2; Seaboard Air Line common, 26 1/2 to 26; do. preferred, 52 to 53 1/2, with last sale at 53; Seaboard 4s, stamped, 87 1/2; Mt. Vernon-Woodberry Cotton Duck 5s, 75 1/2 to 75 1/2; G. B. S. Brewing common, 4 1/2 to 6 1/2; do. income bonds, 15 1/2 to 19 1/2; do. 4s, 52 1/2 to 58 1/2, reacting to 56 1/2, with last sale at 57.

Bank of Baltimore sold at 165; Exchange Bank, 162 1/2; Western Bank, 38 to 37 1/2; American Bonding, 76 1/2; Fidelity Trust, 230; Fidelity & Deposit, 150 to 150 1/2; Maryland Casualty, 97; Baltimore Trust, 165; United States Fidelity & Guaranty, 182 1/2 to 184; Mercantile Trust, 152 1/2.

Other securities were traded in thus: City & Suburban (Baltimore) 5s, 105; do. (Washington) 5s, 105; Coal & Iron Railway 5s, 102; Fairmont & Clarksburg Traction 5s, 101; Norfolk & Portsmouth Traction 5s, 89 1/2 to 89 1/2; Houston Oil common, 10; do. trust certificates, 10 to 10 1/2; do. preferred, trust certificates, 62 1/2 to 66 1/2, with last sale at 65 1/2; do. do. dividend certificates, 83 1/2 to 84 1/2; Maryland Electric 5s, 99 1/2 to 99 1/2; Macon Railway & Light 5s, 100 1/2; Atlantic Coast Line convertible debenture 4s, 103 1/2 to 104; Baltimore Electric 5s, stamped, 99 1/2 to 99 1/2; Jamison Coal & Coke, George's Creek 5s, 93 1/2; International & Great Northern Corporation, 51 to 52; Milwaukee Electric 5s, 104 1/2; Columbia & Greenville 6s, 105 1/2; Consolidation Coal refunding 5s, 93 1/2 to 93 1/2; do. stock, 103; Georgia & Alabama Consolidated 5s, 106 1/2; Norfolk Railway & Light 5s, 100; New Orleans, Mobile & Chicago 5s, 92; Baltimore City 4s, 1957, 100 1/2; do. 3 1/2s, 1928, 94 1/2; do. do. 1930, 94 1/2; Georgia Southern & Florida 5s, 106 1/2; Georgia Pacific 1st 6s, 112 1/2 to 112 1/2; South Carolina 4 1/2s, 102; Atlanta & Birmingham 4s, 88; Augusta & Aiken preferred, 81 1/2; Columbia County (Florida) 6s, 96; City of Tacoma, Green River 5s, 100 1/2; Detroit United 4 1/2s, 78 1/2; Manchester Water 5s, 103 1/2; Richmond & Danville debenture 5s, 105; Baltimore, Sparrows Point & Chesapeake 4 1/2s, 97 1/2; Fairmont Coal 5s, 96 1/2; Chicago Railways 5s, 101; Macon, Dublin & Savannah 5s, 101; Newport News & Old Point 5s, 99; Pennsylvania Water & Power common, 67 1/2 to 68; do. 5s, 91 1/2 to 92 1/2; Virginia Railway & Power common, 48; Washington, Baltimore & Annapolis 5s, 87 1/2; Baltimore Traction 5s, 107; Georgia, Carolina & Northern 5s, 105 1/2; Knoxville Traction 5s, 106 1/2; Petersburg A, 107; Georgia & Florida 5s, 78; Maryland & Pennsylvania Railroad stock, 30; Atlantic Coast Line, 141 1/2; do. consolidated 4s, 95 1/2; do. Connecticut 5-20s, 92 1/2.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended May 1, 1912.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast of Conn.	100	27 1/2	27 3/4
Fairmont & Clarks. Trac. Pfd.	100	85	85
Georgia Sou. & Fla.	100	25	40
Georgia Sou. & Fla. 1st Pfd.	100	96	110
Georgia Sou. & Fla. 2d Pfd.	100	81 1/2	81 1/2
Maryland & Pennsylvania	100	29	32
Norfolk Railway & Light	100	25	30
United Rys. & Elec. Co.	50	23 1/2	25 1/2
Virginia R. & P. Com.	100	48	48
Bank Stocks.			
Bank of Baltimore	100	162	166
Farmers & Merchants	40	50 1/2	52
German	100	110	114
Mechanics	10	28	30
Western	20	37 1/2	37 3/4

Trust, Fidelity and Casualty Stocks.

Baltimore Trust.....	100	165
Continental Trust.....	100	220
Fidelity & Deposit.....	50	150 1/2
Maryland Casualty.....	25	97
Mercantile Trust & Deposit.....	50	152 1/2
U. S. Fidelity & Guaranty.....	100	183 1/4

Miscellaneous Stocks.

Ala. Con. Coal & Iron.....	100	30
Baltimore Electric Pfd.....	45	45 1/2
Canton Company.....	100	145
Con. Gas, Elec. Lt. & P. Com.....	100	113
Con. Gas, Elec. Lt. & P. Pfd.....	100	112 1/2
Consolidation Coal.....	100	102 1/2
G. B. S. Brewing Co.....	100	6 1/4
Georges Creek Coal.....	100	1
Mer. & Min. Trans. Co., V. T.....	100	70

Railroad Bonds.

Atlantic Coast 1st 4s.....	95 1/2	95 1/2
Atlantic Coast Conv. Deben. 4s.....	103 1/2	104 1/2
At. Coast (Conn.) 4s, Cfs., 5-20s.....	92 1/2	92 1/2
Atlantic Coast (S. C.) 4s.....	95 1/2	95 1/2
Balto. & Annapolis S. L. 5s.....	77	79
Carolina Central 4s.....	93	93 1/2
Coal & Coke Railway 5s.....	94	94
Coal & Iron Railway 5s.....	101 1/2	102
Col. & Green. 1st 5s.....	105 1/2	105 1/2
Georgia & Alabama 5s.....	106 1/2	106 1/2
Georgia & Florida 5s.....	78	78
Georgia, Car. & North. 1st 5s.....	112 1/2	113 1/2
Georgia Pacific 1st 5s.....	106 1/2	107 1/2
Georgia South. & Fla. 1st 5s.....	106 1/2	107 1/2
Macon, Dublin & Savannah 5s.....	101	101 1/2
New Orleans Gt. Nor. 5s.....	70	70 1/2
Petersburg Class A 5s.....	107	108
Petersburg Class B 5s.....	116 1/2	117 1/2
Seaboard 4s, Stamped.....	87 1/2	87 1/2
Seaboard Adjusting 5s.....	79 1/2	79 1/2
Seaboard Refunding 4s.....	81 1/2	82 1/2
South Bound 5s.....	107 1/2	107 1/2
Suffolk & Carolina 5s.....	101	101
Virginia Midland 4th 5s.....	103	103

Street Railway Bonds.

Anacostia & Potomac 5s.....	100	100 1/2
Atlanta Con. Street Railway 5s.....	105	105
Balto., Sp. Pt. & C. 4 1/2s.....	97	97 1/2
Baltimore Traction 1st 5s.....	108	108
Charleston Con. Electric 5s.....	95	96
Citizens' R. L. & P. of N. N. 5s.....	86	86
City & Suburban 5s (Balto.).....	105 1/2	105 1/2
City & Suburban 5s (Wash.).....	104	106
Fairmont & Clarksburg Trac. 5s.....	103 1/2	104 1/2
Knoxville Traction 5s.....	94 1/2	95
Lexington Railway 1st 5s.....	105 1/2	105 1/2
Macon Railway & Light 5s.....	100 1/2	101
Maryland Electric Railway 5s.....	99	99 1/2
Newport News & Old Point 5s.....	98 1/2	99 1/2
Norfolk & Portsmouth Traction 5s.....	89 1/2	89 1/2
Norfolk Railway & Light 5s.....	100	100
United Railways 1st 4s.....	85	85 1/2
United Railways Income 4s.....	66 1/2	67 1/2
United Railways Funding 5s.....	90	90
Virginia Railway & Power 5s.....	95 1/2	96

Miscellaneous Bonds.

Ala. Con. Coal & Iron 5s.....	92 1/2	93 1/2
Baltimore Electric 5s, Stp.....	99 1/2	99 1/2
Consolidated Gas 5 1/2s.....	100	100 1/2
Consolidated Gas 4 1/2s, Cfs.....	97 1/2	98 1/2
Consolidated Gas 4 1/2s, Cfs.....	99 1/2	100
Con. Gas, Elec. Lt. & P. 4 1/2s.....	90	90 1/2
Con. Gas, Elec. Lt. & P. Notes.....	99 1/2	100 1/2
Consolidation Coal Ref. 4 1/2s.....	92 1/2	93 1/2
Consolidation Coal Ref. 5s.....	93 1/2	93 1/2
Fairmont Coal 1st 5s.....	96 1/2	97
G. B. S. Brewing 1st 4s.....	56 1/2	57
G. B. S. Brewing Income 5s.....	73 1/2	74
Mt. Vernon-Woodby Co. Duck 5s.....	73 1/2	74
United Elec. Lt. & P. 4 1/2s.....	94 1/2	94 1/2

SOUTHERN COTTON-MILL STOCKS.

Quotations furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending April 29.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.).....	75	75
Aiken Mfg. Co. (S. C.).....	55	55
American Spinning Co. (S. C.).....	102	102
Anderson Cotton Mills (S. C.).....	48	48
Anderson Cot. Mills (S. C.) Pfd.....	100	100
Arcadia Mills (S. C.).....	90	90
Arkwright Cotton Mills (S. C.).....	90	100
Belt Mills (S. C.).....	100	110
Brandon Mills (S. C.).....	90	90
Brogan Mills (S. C.).....	60	60
Chiquola Mfg. Co. (S. C.).....	160	160
Clifton Mfg. Co. (S. C.) Pfd.....	97	97
Clinton Cotton Mills (S. C.).....	130	130
Courtney Mfg. Co. (S. C.).....	93	93
Dallas Mfg. Co. (S. C.).....	99	99
Darlington Mfg. Co. (S. C.).....	45	45
D. E. Converse Co. (S. C.).....	75	75
Drayton Mills (S. C.).....	90	90
Eagle & Phenix Mills (Ga.).....	106	106
Easley Cotton Mills (S. C.).....	182	175
Enoree Mfg. Co. (S. C.).....	25	63
Enoree Mfg. Co. (S. C.) Pfd.....	85	100
Gaffney Mfg. Co. (S. C.).....	85	85
Gainesville Cotton Mills (Ga.).....	72	80
Glenwood Cotton Mills (S. C.).....	130	140
Grantville Mfg. Co. (S. C.).....	135	145
Greenwood Cotton Mills (S. C.).....	57	60
Grendel Mills (S. C.).....	90	100
Hartsville Cotton Mill (S. C.).....	100	100
Henrietta Mills (N. C.).....	100	175
Inman Mills (S. C.).....	100	100
King Mfg. Co. J. P. (Ga.).....	80	85
Lancaster Cotton Mills (S. C.).....	130	130
Lancaster Cot. Mills (S. C.) Pfd.....	97	100
Langley Mfg. Co. (S. C.).....	75	75
Laurens Mills (S. C.).....	125	125
Limestone Mills (S. C.).....	155	160
Lockhart Mills (S. C.).....	60	60
Lockhart Mills (S. C.) Pfd.....	90	100
Loray Cotton Mills (N. C.) Pfd.....	75	75
Marlboro Cotton Mills (S. C.).....	90	90
Mills Mfg. Co. (S. C.).....	90	102
Molokhon Mfg. Co. (S. C.).....	105	105
Monaghan Mills (S. C.).....	105	105
Monarch Cotton Mills (S. C.).....	110	110
Newberry Cotton Mills (S. C.).....	125	130
Ninety-Six Cotton Mills (S. C.).....	130	150
Norris Cotton Mills (S. C.).....	115	115
Orr Cotton Mills (S. C.).....	90	93
Pacolet Mfg. Co. (S. C.).....	90	90
Pacolet Mfg. Co. (S. C.) Pfd.....	95	100
Parker Common.....	20	20
Parker Preferred.....	120	120
Pelzer Mfg. Co. (S. C.).....	110	110
Poe Mfg. Co. F. W. (S. C.).....	110	110
Saxon Mills (S. C.).....	130	130
Spartan Mills (S. C.).....	110	120
Trion Mfg. Co. (Ga.).....	130	130
Tucapau Mills (S. C.).....	300	350
Union-Buffalo (S. C.) 1st Pfd.....	60	60
Union-Buffalo (S. C.) 2d Pfd.....	15	15
Victor Mfg. Co. (S. C.).....	110	115
Warren Mfg. Co. (S. C.).....	80	90
Warren Mfg. Co. (S. C.) Pfd.....	100	105

Washington Mills (Va.).....	28	...
Washington Mills (Va.) Pfd.....	106	110
Whitney Mfg. Co. (S. C.).....	110	110
Wiscasset Mills (N. C.).....	135	135
Woodruff Cotton Mills (S. C.).....	96	100
Woodside Cotton Mills (S. C.).....	100	100
Watts Mills (S. C.).....	70	70
Williamston Mills (S. C.).....	115	125

Louisiana Bankers' Convention.

At the annual convention of the Louisiana Bankers' Convention, held at Covington April 26 and 27, the following officers were elected for the ensuing year: Dr. L. H. Jastremski of Houma, president; H. B. Apter of Monroe, vice-president; L. O. Broussard of Abbeville, secretary, and L. M. Pool of New Orleans, treasurer; executive committee, J. H. Fulton of New Orleans, J. W. Bolton of Alexandria, Charles Janvier of New Orleans, R. N. Sims of Donaldsonville, W. F. Voorhies of Shreveport, A. Breton of New Orleans and Harvey Ellis of Covington.

Bank Reports.

The First National Bank of Baltimore reports at close of business April 18, 1912, loans and discounts, \$4,197,159; capital stock paid in, \$1,000,000; surplus fund, \$350,000; undivided profits, less expenses and taxes paid, \$71,529; total deposits, \$6,209,655; total resources, \$8,257,368. H. B. Wilcox is president; Blanchard Randall, vice-president; Wm. S. Hammond, cashier; Samuel W. Tschudi and R. E. Bolling, assistant cashiers.

FINANCIAL CORPORATIONS.

Ala., Fairhope.—Reported that a new bank is being organized by Parker H. Sercombe.

Ark., Nashville.—A new bank is reported being organized by W. W. Brown of Camden, C. C. Ramsey and others.

Ark., Warren.—The First National Bank is reported organized with directors thus: H. L. Turner, president; O. O. Axley, vice-president; Carl Hollis, cashier; J. C. Mansfield, P. L. Purcell, J. W. Richardson, G. B. Colvin, O. W. Wheelless, H. F. Butler and W. J. Savage.

Fla., Auburndale.—Mr. J. H. McLain will, it is reported, open a private bank.

Fla., Auburndale.—Press dispatches state that a new State bank is to be organized with \$15,000 capital.

Fla., Lawley.—The Lawley State Bank will make application for a charter; capital \$15,000; organizers, W. F. Godwin, Louis H. Hill, G. W. Brown, A. M. Blanchard, E. J. Roberts, G. T. Pearce, H. C. Peace, M. D. Carter, A. A. Smith, J. A. Howe, D. Durban and A. H. Harley.

Ga., Athens.—The Anderson Banking Co. is reported to have made application for a charter; capital \$50,000; petitioners, John T. Anderson and H. T. Hudgins of Athens, Geo. Y. Coleman of New York.

Ga., Atlanta.—The Southern Finance Corporation, authorized capital \$1,000,000, is reported to have elected S. C. Callaway, president, and Thomas M. Callaway, vice-president and treasurer, and A. J. Shrophshire, secretary.

Ga., Macon.—Official: Fidelity Mortgage Co. chartered; capital \$25,000; organizers, Morris Harris and Henry Harris of Macon, and P. L. Duschne of New York. Business is expected to begin about May 15.

Ga., Moultrie.—The Stokes-Roddenberry Company has made application for a charter; capital \$50,000, with privilege of increasing to \$100,000; petitioners, R. L. Stokes, R. S. Roddenberry and A. F. Stokes. The company will conduct a general insurance and real estate business.

Ga., Savannah.—The Southern Investment Co. has made application for a charter; capital \$10,000, which may be increased to \$15,000 or \$20,000. Petitioners, C. R. Bordley, J. R. Cain, J. W. Daniel, R. W. Farr, F. Hahne, I. C. Helmy, W. P. McCall, L. E. McTyre, H. H. Morgan and G. R. White.

Miss., Amory.—The First National Bank of Amory is reported being organized with \$5,000 capital; directors, W. W. Watkins, A. G. Thompson, E. J. Dunn and J. M. Buchanan.

Miss., De Soto.—Reported that a new bank is being organized with \$10,000 capital. J. C. Barnes of Virginia will, it is stated, be cashier.

Miss., Gulfport.—The Gulf Coast Life Insurance Co. is reported authorized to do business; capital \$350,000. P. M. Anderson

is president and Nat Owen, secretary; directors, B. C. Lawler, Charles Le Baron, D. L. Hays, James O. Mauffrey, D. Hardy Cox, M. P. Bouslog, S. A. Tomlinson and J. R. Hill.

Mo., Bloomfield.—Reported that the Standard County Trust Co. is being organized at Bloomfield with \$100,000 capital.

N. C., Ellerbe.—Official: The Bank of Ellerbe chartered; capital \$20,000; incorporators, M. W. McTae, Rockingham, N. C.; J. R. Owen and J. R. Bennett, Ellerbe, N. C. Officers not yet elected. Business is expected to begin about August 1.

N. C., Henderson.—Official: The Home Building and Loan Association incorporated; capital \$100,000. Officers and directors not yet elected. Business is expected to begin May 9.

N. C., Richlands.—Official: The Citizens' Bank incorporated; capital paid in \$10,000; incorporators, J. E. Steed, W. B. Venters, G. B. Whitfield, R. V. Venters, Dr. C. W. Suttin, G. B. Whitfield will be cashier. Other officers not yet elected. Business is expected to begin soon.

Okla., Oklahoma City.—The Credit Protection Insurance Co. is reported chartered with \$100,000 capital. Incorporators, J. J. Wood, W. B. Skirvin, B. M. Lovelace, Warren B. Watkins, R. H. Wilson, H. W. Williams, D. W. Collins, N. L. Linebaugh and I. V. Mantz, all of Oklahoma City.

S. C., Bamberg.—Reported chartered: The Standard Serial Building and Loan Association; capital \$50,000 to \$500,000; officers, D. M. Eaves, president; John M. Kirkland, vice-president; H. M. Graham, manager and treasurer.

S. C., Cheraw.—The Citizens' Loan & Trust Co. is reported to have been granted a commission; capital \$15,000; petitioners, M. B. Smith, J. A. Watson, P. H. Shuck, S. T. A. McManus and Thurlow W. Belk, all of Cheraw.

S. C., Darlington.—Official: The Darlington Building and Loan Association chartered; capital \$100,000; A. Hyman, president; D. T. McKelthan, vice-president, and W. E. Edwards, secretary and treasurer. Business is to begin at once.

S. C., St. Stephens.—The State Bank of St. Stephens is reported to have been granted a commission; capital \$10,000. Petitioners, W. E. Perkins and E. H. Smith of St. Stephens, and M. C. Dowling of Augusta, Ga.

S. C., Williston.—The Farmers and Merchants' Bank is reported chartered; capital \$25,000. R. M. Mixson is president, and J. J. Bell, vice-president.

S. C., Fairfax.—The Bank of Fairfax is reported to have been granted a commission; capital \$20,000; petitioners, H. M. Harvey, J. T. Wilson, N. B. Loodhalt, Laurens Youmans, all of Fairfax, and M. C. Dowling of Augusta, Ga.

S. C., Plum Branch.—Official: The Bank of Plum Branch chartered; capital \$10,000; directors, J. L. Braknell, president; W. H. Parks, vice-president; M. B. Sturkey, J. W. Miller and J. W. Braknell, all of Plum Branch, and W. B. Pace of Augusta, Ga. John K. Faulkner is cashier. Business has begun.

Tenn., Jackson.—Official: The Security Bank & Trust Co., 115 Main St., chartered; capital \$50,000; A. M. Alexander, president; W. G. Morgan, vice-president; B. H. Blacklock, cashier, and Oliver Benton, assistant cashier. Business is to begin about July 1.

Tenn., Curve.—The Berry Growers' Bank, capital \$30,000, is reported organized with officers thus: J. M. Abernathy, president; S. B. Johns, Noble Bass, W. T. Andrews, vice-presidents; H. O. Rogers, cashier; directors, J. A. Langley, B. B. Griffin, T. B. Ferguson, C. E. Williams, H. O. Rogers, N. J. Harward, Lee Johnson, J. G. Thompson, Jr., C. F. Cates, J. W. Mulliken and W. J. Wilson.

Tex., Edith.—Reported chartered: Bank of Edith; capital \$25,000. Incorporators, T. L. Garrett, J. C. Sanford, R. M. Pritchard, J. T. Beard and W. E. Canfield.

Tex., Hebron.—Official: The Hebron State Bank chartered; capital \$10,000. W. C. Furneaux is president and D. B. Allen, cashier. Business is to begin June 1.

Tex., Hooks.—Reported chartered: Guaranty State Bank; capital \$10,000; E. S. King, J. W. King and J. W. Stewart.

Tenn., Linden.—The First National Bank is reported chartered; capital \$25,000. H. N. Ledbetter is president and J. E. Smith cashier. This is a conversion of the Perry County Bank.

Tex., Waco.—Official: The Peerless Fire Insurance Co., 1900 Amicable Bldg., chartered; proposed capital \$500,000; surplus \$100,000; C. C. Beckley, president; Chas. L. Sanger, vice-president, and J. W. Saunders, sec-

retary and treasurer. Business is to begin about July 1.

Va., Suffolk.—The Thompson-Everett Company incorporated; capital \$5000 to \$25,000; directors, C. C. Thompson, president; V. D. Thorp, vice-president; P. G. Everett, secretary and treasurer.

NEW SECURITIES.

Ala., Athens.—Reported that an election is to be held May 27 to vote on water-works and sewerage system bonds.

Ala., Jasper.—Reported that an election was held April 22 to vote on \$13,000 of sewerage bonds.

Ala., Selma.—Reported that Dallas county proposes to vote in the near future on between \$100,000 and \$150,000 of road bonds.

Ark., Osceola.—Official: Farson, Son & Co., Chicago, have purchased the \$20,000 of 6 per cent. Mississippi county courthouse bonds.

Fla., Apalachicola.—An election is to be held May 14 to vote on \$15,000 of 6 per cent. sewerage bonds; denomination \$1000. H. D. Marks is Mayor.

Fla., Fort Meade.—Official: Voted April 16: \$39,000 of 5 per cent. 15-30-year water-works and sewerage bonds; denomination \$1000. Bids will probably be asked about June 1 or 15. W. E. Arthur is secretary bond trustees; R. C. McClelland is Mayor.

Fla., Lakeland.—Official: Farson, Son & Co., Chicago, purchased the \$150,000 of 5 per cent. street, sewer and city hall bonds.

Fla., Madison.—C. H. Smith of Madison is reported to have been awarded \$30,000 of 4 per cent. 1-20-year water and light bonds.

Fla., St. Andrews.—May 25 an election is to be held to vote on \$30,000 of 5 per cent. municipal bonds; denomination \$100; dated August 1, 1912. S. J. Gainer is Mayor and J. R. Thompson, Town Clerk.

Fla., St. Petersburg.—June 11, it is reported, an election is to be held to vote on \$30,000 of 6 per cent. 20-year municipal improvement bonds.

Fla., Tampa.—An election is to be held June 4, it is reported, to vote on approximately \$1,500,000 of docks, street, park, sewerage and other improvement bonds.

Ga., Bogart.—Official: Bids will be opened on May 1 for \$5000 of 5 per cent. school building bonds; voted February 9, 1912; denomination \$500; maturity April 1, 1915, and one bond every three years after. B. L. C. Crow is Mayor.

Ga., Carrollton.—Official: Voted April 3: \$60,000 of 5 per cent. bonds as follows: \$4000 for water-works, \$25,000 for city hall, \$15,000 for school and \$10,000 for streets; denomination \$1000. Emmett Smith is City Clerk.

Ga., Cartersville.—May 25, it is reported, an election is to be held to vote on \$32,000 of electric light, gas and water-works bonds.

Ga., Decatur.—Reported voted: \$30,000 of school improvement and \$5000 of sewerage improvement bonds.

Ga., Lavonia.—Official: H. T. Sewell, City Clerk and Treasurer, is receiving bids for \$5000 of 5 per cent. 20-year electric-light bonds voted April 20, 1912.

Ga., Valdosta.—An official letter confirms report that city proposes to issue \$100,000 of bonds. T. N. Holcombe is Clerk and John T. Roberts Mayor.

Ky., Elkton.—Regarding the report that Todd county is considering the question of issuing road bonds, an official letter says that no issue is authorized as yet, but that proposition may be submitted to voters at next November election. C. E. Gill is clerk.

Ky., Lancaster.—Official: Bids will be received until noon May 4 by H. T. Logan, Mayor, for \$12,000 of 5 per cent. water-works extension bonds; denomination \$100; dated May 1, 1912; maturity 1916 to 1932, inclusive. Bonds were voted November, 1911.

La., Coushatta.—Official: Defeated: Court-house and jail bonds of Red River parish.

La., St. Rose.—Plans are reported under way to issue \$20,000 of bonds of subdrainage district No. 1 of the Pontchartrain drainage district.

Md., Annapolis.—Official: Bids will be received until noon May 20 for \$100,000 of 4 1/2 per cent. 30-year first mortgage water loan bonds; also for \$16,000 of 4 per cent. 12 1/2-year street-improvement bonds; denomination \$1000. James F. Strange is Mayor.

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 WM. INGLE, Vice-Pres. and Cashier.
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 Capital \$1,500,000
 Surplus and Profits - - \$900,000
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 Accounts of Banks, Bankers, Corporations and Individuals solicited. We invite correspondence.

THE FIRST NATIONAL BANK
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 United States Depository and Disbursing Agent.
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 Surplus and Undivided Profits - \$40,000
 A general banking business transacted. Special attention given to collections.

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 REALTY DEPARTMENT has sites for manufacturing industries. Modern Methods of management of property.
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 J. ERNEST SMITH, V.-Pres. and Gen. Council.
 WM. G. TAYLOR, Treasurer.
 HARRY W. DAVIS, Secretary.
 W. W. PUSEY, 3d Title and Real Estate Officer.

H. B. Wilcox, President. Blanchard Randall, V.-Pres.
 Wm. S. Hammond, Cashier.
 Saml. W. Tschudi, A. Cash. R. E. Bolling, A. Cash.
The First National Bank
 17 South St., Baltimore, Md.
 Capital - - - - \$1,000,000
 Surplus and Net Profits - - 400,000
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 Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

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CAPITAL AND SURPLUS - - - - \$3,500,000
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 Interest Allowed on Deposits Subject to Check.
 Special Rates Made on Time Deposits.
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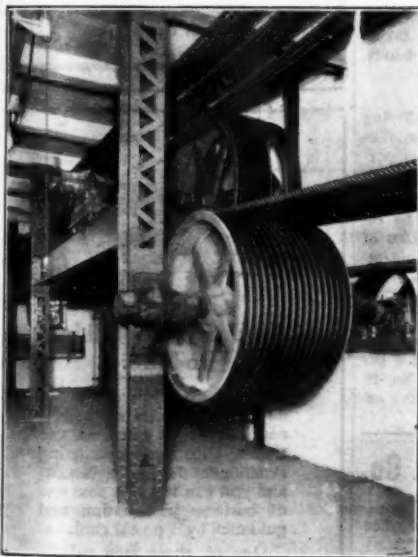
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 References—Any Bank in Savannah

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 NEW YORK PHILADELPHIA CHICAGO
 87-89 Leonard Street 120 Chestnut Street 206 S. Market Street

RESOURCES - - - - \$14,975,352.57
 DEPOSITS DEC. 31, 1909.....\$ 8,041,252.59
 DEPOSITS DEC. 31, 1910..... 8,809,843.00
 DEPOSITS DEC. 31, 1911..... 10,344,570.57
 This growth indicates that we have the ability and disposition to give GOOD TRUST COMPANY SERVICE. We can prove it—to your advantage.
 ALLOWS INTEREST on daily balances of \$500 or over, subject to check, and special rates for time deposits.
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 CAPITAL - \$1,500,000.00 SURPLUS - \$3,000,000.00



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- It will pay you to send for this book, "The Blue Book of Rope Transmission," and to acquire the valuable engineering knowledge which it contains.

AMERICAN MANUFACTURING COMPANY
 Makers of "AMERICAN" Transmission Rope
 Noble and West Sts. BROOKLYN, N. Y. C.

of opening bids not yet decided. Address The Mayor.

Md., Rockville.—Reported that Montgomery county proposes to issue immediately \$17,000 of road-building bonds.

Miss., Ackerman.—Reported that \$15,000 of water and school bonds are to be issued.

Miss., Brooksville.—Reported that it is proposed to issue \$7500 of water-works bonds.

Miss., Friar Point.—Reported that bids will be received until noon May 6 by T. S. Aderholdt, president Board of Supervisors of Coahoma County, for \$50,000 of 5 per cent. 30-year road and bridge bonds; denomination \$500; dated June 1, 1912.

Miss., Jackson.—Reported that an ordinance has been passed authorizing the issuing of \$30,000 of street improvement and \$60,000 of funding bonds.

Miss., Hernando.—Official: On May 7 city will issue \$14,000 of bonds to build a municipal high school. Address R. E. L. Morgan.

Miss., Lambert.—Official: Bids will be received until 9 P. M. May 7 by S. Ingram, Town Clerk, for \$5000 of 6 per cent. 20-year water-works and sewerage bonds; denomination \$500; dated May 1, 1912.

Miss., Yazoo City.—The election to vote on \$30,000 of water bonds will, it is reported, be held May 17. H. W. McCormick is City Clerk.

Mo., Kirkwood.—Official: Defeated: School building bonds. C. A. Lawton is secretary Kirkwood School District.

Mo., Lamonte.—Bids will be received until 8 P. M. May 7 by J. R. Clark, City Clerk, for \$50,000 of 5 per cent. 5-20-year city hall bonds; denomination \$500; dated June 1, 1912.

Mo., Lebanon.—Lebanon special road district No. 1 of Laclede county is reported to have voted \$50,000 of road-building bonds.

Mo., Mound City.—J. S. Smith of Mound City is reported to have been awarded at \$100.50 and blank bonds \$15,000 of 5-20-year sewer and water-main extension bonds.

Mo., Odessa.—Reported voted: \$25,000 of high-school building bonds.

Mo., University (P. O. St. Louis).—Reported voted: \$60,000 of high school bonds.

N. C., Dunn.—The question of issuing about \$50,000 of sewerage bonds is reported under consideration.

N. C., Hickory.—Official: Voted: \$50,000 of 5 per cent. Hickory township road-improvement bonds. Address S. L. Rhyne.

N. C., Newbern.—Official: \$50,000 of 5 per cent. funding bonds were purchased by Farnson, Son & Co. of Chicago.

N. C., Williamston.—Official: Martin county is offering for sale \$25,000 of 6 per cent. 30-year Williamston Township road bonds. This is part of the \$40,000 issue authorized in 1911; denomination \$500. H. M. Burras is chairman Board of Commissioners.

N. C., Winston-Salem.—Press dispatches say that the new election to vote on \$100,000 of street, \$50,000 of water, \$55,000 of sewer, \$90,000 of hospital, \$15,000 of park and \$60,000 of school bonds will be held during the early part of July.

Okla., Cherokee.—May 14, it is stated, an election is to be held in Alfalfa county to vote on \$100,000 of courthouse bonds.

Okla., Chelsea.—W. A. Brooks of Oklahoma City is reported to have purchased \$5000 of water-works bonds.

Okla., Idabel.—Official: R. J. Edwards of Oklahoma City, represented by C. C. Roberts, Oklahoma City, purchased on April 16 the \$35,000 of 6 per cent. water-works extension and improvement bonds; denomination \$1000; dated March 15, 1912; maturity March 15, 1937. R. S. McLean is City Clerk.

Okla., Marietta.—Reported defeated: \$100,000 of road and \$26,000 of bridge, Love county, bonds.

Okla., Muskogee.—Official: Bids will be received until 8 P. M. May 1 for \$130,000 of 4½ and 5 per cent. 25-year school bonds; voted April 16; denomination \$1000. School Commissioners: D. N. Fink, H. M. Chestnutt and W. H. Davis, clerk. W. P. Miller is Mayor.

Okla., Pawhuska.—A. J. McMahon of Oklahoma City is reported to have purchased \$75,000 of Osage county funding bonds.

Okla., Sand Springs.—Reported that an election is to be held to vote on \$30,000 of school bonds.

Okla., Webbers Falls.—Reported voted: \$17,000 of water-works bonds.

S. C., Barnwell.—Reported that the election to vote on electric-light and water-works bonds will probably be held May 8.

S. C., Camden.—Official: The Aetna Life Insurance Co., Hartford, was awarded the \$36,000 of 6 per cent. 20-year Kershaw county

refunding railroad aid bonds at a premium of \$4910. M. C. West is County Supervisor.

S. C., Columbia.—The Palmetto National Bank of Columbia is reported to have purchased at par and accrued interest \$20,000 of 5 per cent. 20-year bonds of Richland county school district No. 13.

S. C., Greenville.—Official: A special election is to be held May 7 to vote on \$115,000 of street improvement and \$35,000 of sewerage extension bonds. Henry Briggs is Mayor and G. Frank League clerk and treasurer.

S. C., Greenville.—Official: City has for sale \$10,000 of refunding railroad bonds. Henry Briggs is Mayor and G. Frank League clerk and treasurer.

S. C., Norway.—Reported voted: \$10,000 of school-building bonds.

S. C., Summerville.—Official: Bids will be received on or before May 10 for \$15,000 of 6 per cent. 20-year bonds of School District No. 18, Dorchester county; denomination \$500. Address Legare Walker, attorney, Guerin Bldg., Summerville.

Tenn., Athens.—Reported defeated: \$25,000 of funding and street bonds.

Tenn., Bristol.—Press dispatches state that the First National Bank of Bristol has purchased \$200,000 of 4½ per cent. Sullivan county road bonds.

Tenn., Chattanooga.—Official: Bids will be received until 3 P. M. May 14 for \$250,000 of public park and \$300,000 of floating indebtedness and sewer 4½ per cent. 30-year bonds. Address T. C. Thompson, Mayor.

Tenn., Cleveland.—Reported that an election is to be held within the next 30 days to vote on \$50,000 of railroad aid bonds. Charles Mayfield is Mayor.

Tenn., Dickson.—H. C. Speer Sons Co. of Chicago is reported to have purchased at par \$15,000 of 5 per cent. 30-year school bonds.

Tenn., Jonesboro.—The Supervisors of Washington county are reported to have made arrangements to issue \$18,000 of road bonds.

Tenn., Memphis.—Reported that Breed & Harrison of Cincinnati were awarded at \$7661 premium the \$670,000 of 4½ per cent. general liability bonds. Ennis M. Douglas is City Clerk and E. H. Crump, Mayor.

Tenn., Murfreesboro.—Bids will be received until 8 P. M. May 23 for \$2400 of 6 per cent. 5-20-year street-improvement bonds. Denomination \$200. Address Dr. John M. Crigger, Alderman.

Tenn., Nashville.—An official letter says that city will not issue any bonds before the middle of October, 1912, at or about which time it is expected to issue \$150,000 of street-improvement and \$200,000 of market-house bonds. H. E. Howse is Mayor.

Tenn., Sparta.—White county is reported to have for sale \$80,000 of 4½ per cent. road bonds. W. L. Dibrell is clerk, County Court.

Tenn., Springfield.—The Mercantile Trust Co. of Jackson, Tenn., is reported to have been awarded at \$4500 premium the \$300,000 of 4 per cent. 20-30-year Robertson county bonds. Lee T. Dowell is County Clerk.

Tex., Austin.—An official letter confirms report that an election is to be held April 24 to vote on municipal improvement bonds. A. P. Woodridge is Mayor.

Tex., Austin.—The Attorney-General is reported to have approved securities as follows: \$70,000 of Jim Wells county courthouse bonds, \$15,000 of water-works bonds of Paris, \$700 of District No. 1, \$1200 of District No. 5, \$600 of District No. 26, \$1200 of District No. 41, \$400 of District No. 63 and \$1400 of District No. 15, Rusk county 5 per cent. 10-20-year school bonds; \$1,600,000 of Tarrant county road and bridge 5 per cent. 10-40-year bonds.

Tex., Canton.—May 4, it is reported, an election is to be held in Van Zandt county to vote on \$50,000 of Grand Saline road district bonds.

Tex., Denton.—Reported voted: \$3000 of 5 per cent. school bonds.

Tex., Grayson.—Reported that bids will be received until 10.30 A. M. May 22 by H. R. Wallace, County Judge, for \$400,000 of 5 per cent. 10-40-year Grayson county road bonds.

Tex., Greenville.—May 25, it is reported, an election is to be held in Greenville precinct, Hunt county, to vote on \$400,000 of road bonds.

Tex., Hillsboro.—Official: May 23 an election is to be held to vote on \$40,000 of 5 per cent. school-building bonds. A. W. Young is secretary School Board.

Tex., Kerrville.—Reported voted: \$20,000 of street-improvement bonds.

Tex., Lufkin.—Reported defeated: \$300,000 of bonds of Precinct No. 1.

Tex., Palacios.—Reported voted: \$25,000 of water-works bonds.

Tex., Richmond.—Official: Voted March 26: \$30,000 of bonds of road district No. 3, Fort Bend county. Bonds are to be submitted to the Attorney-General for approval, and if approval is obtained bonds will be printed and placed on the market. G. C. Baker, Jr., is County Judge.

Tex., San Benito.—May 9 an election is to be held. It is reported, to vote on \$460,667.23 of bonds for drainage system to serve proposed Cameron county drainage district No. 1.

Tex., Terrell.—Reported voted: \$6000 of school and sewer bonds.

Tex., Tuscola.—Reported voted: \$7000 of school-building bonds.

Tex., Victoria.—Wm. J. Craig, Mayor, writes: "No bond issue has been authorized yet. Think likely we may order an election the latter part of May."

Tex., Waxahachie.—May 11, it is reported, an election is to be held in Ellis county to vote on \$75,000 of road district bonds.

Va., Chatham.—Official: On May 9, at public auction, city will sell \$20,000 of street improvement and \$10,000 of sewerage 5½ per cent. 30-year bonds; denomination \$1000; Edwin S. Reid is chairman finance committee, and W. M. Tredway, Jr., clerk. Bonds were voted April 18, 1912, and are dated June 1, 1912.

Va., Clifton Forge.—Reported voted: \$100,000 of water-works bonds.

Va., Jefferson.—An official letter says no stock or bonds are to be issued.

Va., Harrisonburg.—Press dispatches state that on May 16 the \$10,000 of road bonds of Plains district will be offered for sale.

W. Va., Moundsville.—Reported that an election is to be held to vote on \$75,000 of school bonds.

W. Va., Newell.—May 21, it is reported, an election is to be held to vote on \$20,000 of school bonds.

W. Va., New Cumberland.—Hayden, Miller & Co., Cleveland, O., is reported to have purchased at par \$125,000 of 5 per cent. 20-34-year Grant district (Hancock county) road improvement bonds.

W. Va., Shinnston.—Reported voted: \$50,000 of bonds of Clay District, Harrison county, bonds.

W. Va., Wytheville.—Reported that an election is to be held May 14 to vote on \$12,000 of school bonds.

W. Va., Grafton.—Reported voted: \$90,000 of 5 per cent. 34-year water-works bonds. Charles Stolzenfels is Mayor.

Martin county, North Carolina, is offering for sale \$25,000 of 6 per cent. 30-year Williamston township road bonds. Further particulars will be found in the advertising columns.

At Chattanooga, Tenn., bids will be received until 3 P. M. May 14 for \$250,000 of public park and \$300,000 of floating indebtedness and sewer bonds. Further particulars will be found in the advertising columns.

At Summerville, S. C., bids will be received until May 19, inclusive, for \$15,000 of 6 per cent. 20-year bonds of School District No. 18. Further particulars will be found in the advertising columns.

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We desire the services of an experienced corporation auditor and accountant.

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Investment required, \$5000.
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Answer promptly, Box 1008.
MANUFACTURERS RECORD

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*Preserves Roads
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Dobbs Ferry's Experience with Tarvia

BROADWAY in New York is one of the longest highways in the world, running from the Battery in New York City far beyond the city limits to the north, following the line of the Hudson for over fifty miles.

It is one of the great historic thoroughfares of the State and is one of the principal automobile highways in the country on account of its picturesque views overlooking the Hudson and the fine estates which border on it.

The maintenance of this road has proven very expensive and for the purpose of reducing the annual costs, Dobbs Ferry used Tarvia on its section of Broadway. The results are described in the following letter:

Dobbs Ferry, N. Y., January 30, 1912.

Gentlemen:

"The Tarvia-B furnished by your Company to the Village of Dobbs Ferry through Michael J. Francis, Contractor, has proven entirely

satisfactory. The roadway of Broadway from the Hastings village line to that of Irvington, which was practically a new macadam road, is now one of the finest in the State, and Ashford Avenue, which is one mile in length, also a macadam road, is in perfect condition after having been treated with your Tarvia. The automobile traffic is extremely heavy, being approximately one hundred per hour, and on Saturdays and Sundays about double that number, and yet the roadway shows no effects of such traffic.

"The Board of Trustees and the people of Dobbs Ferry are unanimous in their praise of Tarvia, and after having a large experience in the use of road binders, Tarvia-B has my unqualified endorsement."

Yours very truly,

Hugh P. Tiernan, Village Engineer.

Tarvia is a coal tar product scientifically and carefully prepared for road use, in three grades—Tarvia-X for road and pavement construction, Tarvia-A for surface work (applied hot), Tarvia-B for dust prevention and road preservation (applied cold). Illustrated booklet describing the different treatments free on request to nearest office.

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Classified Opportunities

[MEN WANTED]

HIGH-GRADE SALESMEN having acquaintance among large manufacturers will hear of side line paying liberal commission; no samples required. Address "Allen," Box 663, Cincinnati, Ohio.

WE WANT immediately two high-class salesmen to sell lots in a subdivision near Atlanta; a meritorious proposition; 25% commission. Address The Atlanta Realty Owners, 1012 Empire Life Bldg., Atlanta, Ga.

WANTED—Traveling or local men; all sections of the country; profitable side line; commission or salary; good men average \$100 weekly. For particulars address The Sun Chemical Company, Richmond, Va.

HOTEL MANAGER to take stock and lease a new 33-bedroom brick, stucco-finish hotel; picture of elevation and detailed information on request to the Hotel Company of Fernandina, Fernandina, Fla.; capital stock, \$40,000; lessee to take not less than \$5000, say, in stock, or furnish hotel; beautiful location fronting three streets; big possibilities for all-year hotel and resort; no competition; only experienced hotel men need apply.

LIBERAL COMMISSION, PROTECTION AND HONEST CONTRACT ASSURED SALESMEN calling on wholesale and jobbing hardware trade and manufacturing concerns, to sell our celebrated Never Rust, the standard rust preventive, for preserving fine tools, instruments of precision, mathematical instruments, firearms, machinery, etc., from rust and tarnish. Unequaled for efficiency, permanency and economy. Sells at sight to the big houses, with continuous repeat orders. Pocket samples. "Bancroft & Co., Philadelphia.

SITUATIONS WANTED

CIVIL ENGINEER, 11 years' experience, technical man; will take charge of sewer construction, street paving or water-works development for a city in South or Southwest. Address No. 1011, care Manufacturers Record.

CIVIL AND MECHANICAL ENGINEER, machineist by trade, technical graduate, 11 years' experience, wants management of electric-light, ice or water-works; may invest. Address No. 1010, care Manufacturers Record.

POSITION WANTED by a young man with college education and four years' practical experience in concrete bridge work; location immaterial; now unemployed; salary sufficient to live decently; unmarried; references furnished. Address No. 1005, care Manufacturers Record.

SALES MANAGER, with large acquaintance among architects and contractors, capable of closing large contracts or introducing a new building material on the market, experienced in handling men, is open for a position either as representative or to travel throughout the West on a commission nominal drawing account and traveling expenses. Address No. 1014, care Manufacturers Record.

A MAN OF THE BROAD-GAUGE TYPE, with a successful record as an able executive, who has experienced genuine hard work and hard knocks, and who expects to enjoy more of both throughout the rest of his usefulness, is looking for a real job where there is required a capable, level-headed, thoroughgoing individual possessing tact and an unusual amount of energy. Investigation is invited to a true-blue record of 14 years, 9 of which spent in banking (Southern town), advancing from bookkeeper to cashier of national institution. Now associated with reputable manufacturing concern as credit manager and manager of its New York city office. Personal reasons of a most substantial nature cause for seeking a change, and will be made known to interested parties at proper time; age 32; family; splendid health; correct habits and of good address. Your reply will be appreciated and held in absolute confidence. Address No. 1013, care Manufacturers Record.

AGENCIES WANTED

WANTED—The manufacturer's agency for floor and wall tile, metal lath and other builders' products. Address R. W. Creager, 602 Moore Bldg., San Antonio, Tex.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical and Electrical Engineering, and General Science, leading to the degrees of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

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INVESTORS—STOCKHOLDERS.—JOHN S. OGLESBY, PUBLIC ACCOUNTANT, DALLAS, TEXAS. Impartial audits; disinterested appraisals; economical, simple systems. All work given personal attention and supervision. Highest references. Correspondence invited.

BANKS

THE PALMETTO NATIONAL BANK, Columbia, S. C., capital \$250,000, solicits accounts of banks, firms, corporations and individuals, either commercial or savings accounts.

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.

FLORIDA HOTELS

THE WINDSOR HOTEL, Jacksonville's finest and Florida's largest and best year-round hotel. Rates reasonable. American and European plan. Operating the finest European grillroom in the South. Thomas M. Wilson, proprietor.

CAPITAL WANTED

WANTED—Fifty thousand dollars in blocks of one, two and three thousand, for home-building in Lakeland, Florida; A-1 security and ten per cent. interest. Address G. C. Rogan, Box No. 536, Lakeland, Fla.

MANUFACTURING CONCERN with established business wants \$50,000 additional capital; would not object to working partner; situated in mountains of North Carolina; ideal climate and situation. Address No. 954, care Manufacturers Record.

BUSINESS OPPORTUNITIES

HARDWOOD PROPOSITIONS FOR SALE. Two hardwood propositions. Particulars on application. G. W. Faulk & Son, Leakesville, Miss.

AN ESTABLISHED building material business can be purchased, or present owners will retain twenty thousand dollars; located in one of the fast-growing Southern cities. Address No. 1004, care Manufacturers Record.

ABSTRACTS OF TITLE a specialty. Loans negotiated. Inheritances investigated and procured. Real Estate Title Co., New Martinsville, W. Va.

WANTED—A reliable man, or engineer that can command \$10,000 cash investment, to become part owner in a valuable mining property. Address S. A. Jones, Waynesville, N. C.

SALESMAN-ENGINEER covering Southwestern States for past 7 years carrying one line would like an additional line or a strong specialty; well informed on steam and refrigeration and building construction. Address No. 1012, care Manufacturers Record.

POSITION of secretary and general manager is open to party who will purchase some stock and take active interest in incorporated manufacturing business protected by United States patent. Closest investigation will show this is an exceptionally good business opening. Demand for manufactured patented product almost unlimited. W. H. Colby, Chattanooga, Tenn.

WANTED—Connections enabling me to supply demand for loans to improve S. W. Texas black-land farms. 8%.

Wanted—Connections with building and loan company so that I can build hundreds of homes in growing city of Corpus Christi, Texas.

Wanted—To hear from people interested in the most-talked-of section of the U. S.—Corpus Christi and surrounding country. L. G. Collins, Corpus Christi, Texas.

INDUSTRIAL NEGOTIATOR OFFERS HIS SERVICES.—Resourceful trader, skilled in the securing, relocating and financing of established, well-managed industries; the organization, financing and construction of railroads, public and semi-public service works, with proven ability and channels to finance. No commission basis offer will be considered. Replies only wanted from glit-edge corporations. Address No. 997, care Manufacturers Record.

THE GREATEST OF ALL OPPORTUNITIES.—The very best and cheapest that can be found anywhere. 100 acres of beautiful laying land, adjoining the fast developing city of Mobile, and between Mobile's two best manufacturing centers, adjoining the railroad shops, and between two villages of 3000 inhabitants each. We can safely say the proposition is worth \$50,000, and can be purchased for the low price of \$25,000 and on terms to suit. There is nothing of its kind, and nothing that can show such an immediate gain. Jos. Espalla, Jr., & Co., Real Estate Agents, 62 N. Royal St., Mobile, Ala.

WE WANT TRACTS OF LAND located in or immediately adjoining thriving cities; must be well located and suitable for plating into town lots. F. J. Raymond Realty Co., Evansville, Ind.

WANTED—Partner to join me in the Liverpool Land & Investment Company and help develop two towns on the Birmingham Southern Railroad, in Macon county; 3100 acres best improved and most fertile lands in State of Alabama. I also want 30 white families to farm. Will lease lands the first year and then will sell on easy terms. A good opportunity for good people. Wm. Watson Thompson, Pres. Liverpool Land & Investment Co., Tuskegee, Ala., R. F. D.

MANUFACTURING and machine shop would like to correspond with young man of clean, Christian habits, thoroughly trained in this line, with view of investing a working interest with us. Address No. 999, care Manufacturers Record.

MANUFACTURERS AND INVESTORS.—Good inventions mean fortune as the basis of business enterprises. Write for our complete list and state your needs. Note the following for sale: Cotton cultivator; electrical time switch; rubber stamp device; automatic poultry feeder; harness hook; window lock; railroad anchor bar and nut lock; miner's identification belt; reverse steam valve arrangement; sleeve pressing board; shoe-polishing machine; combination dipper and funnel; self-cancelling revenue stamp; bottle-labeling machine; folding umbrella; carburetor; automobile silding tire; sure catarrh cure; tile and concrete glue; tack hammer; safety device for elevators; fence post; doubletree hitch; marine bicycle; burglar-alarm door knob; combination vehicle spring; curtain pole and support; folding ironing board; curtain pole; collapsible drinking cup. Write Adam Fisher Mfg. Co., St. Louis, Mo.

MANUFACTURERS AND INVESTORS.—Good inventions mean fortune as the basis of business enterprises. Write for our complete list and state your needs. Note the following for sale: Quick-acting monkey wrenches; window guards; automatic registering level; ladder brackets; scaffold brackets; games; puzzles; combination hammer and mallet; nozzle; combination fish and cracker bowl; pencil pocket; fan fly trap; time indicator for medicine boxes; hinge with oil holes; automatic matchbox; shoe button; degree level; fuse lighter; safety pin; railroad spike puller; rope measuring device; lamp funnel; adjustable can opener with removable knife; propeller-driven vehicle; improved vehicle wheel; device for reloading freight cars; stove-lid lifter; adjustable desk; carpet stretcher; air-cooling shield; convertible hoe and rake. Write Adam Fisher Mfg. Co., St. Louis, Mo.

EXCEPTIONAL OPPORTUNITY FOR INVESTMENT.—Investor secured by \$300,000 worth of gold bonds covering property worth ten times that amount.

Investment can be made in reasonable installments. Money to be put into improvements on the property. Thos. L. Eggleston, 505 2d St. N. W., Washington, D. C.

FOR SALE—Four-story brick factory or warehouse, center of city; splendid business stores and manufacturing sites with truckage and wharves. Write your wants to Douglas E. Taylor, 18 N. 8th St., Richmond, Va.

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STOVE FOUNDRY FOR SALE.—Complete plant for the manufacture of cast-iron cooking and heating stoves and ranges is offered for sale at a bargain. This plant is exceptionally well located for low manufacturing cost and economical distribution to Southern trade; would make ideal plant for branch to manufacture for Southern trade or for light cast and plated specialties. Owner cannot devote his attention to the business; might retain part interest. For particulars address No. 1009, care Manufacturers Record.

CAPITAL FURNISHED. Do you need money in your business? Don't undertake to secure financial assistance, incorporate a projected enterprise, sell or reorganize an established business or finance a deserving concern until you have seen us.

We furnish capital to any firm or corporation needing financial assistance. If your business needs strengthening, let us know. Our terms are reasonable, and if your proposition will bear thorough investigation, we will furnish the capital on short notice. Special investment service to executives, administrators and guardians. For information address The Wilmoth Investment Company, High-grade Investments, Capital Furnished, Suite 804-806 State National Bank Building, Oklahoma City, Okla. Eastern correspondents.

FOR SALE OR TRADE.—Well-established grain and coal business; warehouse for thirty thousand bushels grain; corner for six hundred barrels; best wheat cleaner in State, capacity 200 bushels per hour; twenty-five thousand sacks; three acres ground with nice new cottage, six rooms, all necessary out-buildings, all new; adjoining above property if wanted. Wharton Bros., Keene, Ky.

MAPS AND BLUE PRINTS

MAPS OF TEXAS COUNTIES.—We make blueprint maps of nearly all Texas counties and oil fields and of California, Vernon, Cameron and Sabine parishes in Louisiana. Price of single county or parish maps, \$1.50 each, except Vernon parish, Louisiana, which is \$2.50 each on paper. Add \$1 to price of any map if desired printed directly on cloth. We solicit your orders. Engineering Department, Singleton Bryan & Co., Beaumont, Tex.

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IF YOU are interested in purchasing a high-grade typewriter and do not care to invest \$100 asked by the manufacturers, we would like you to investigate our remanufactured machines. Three days' trial allowed. Enterprise Exchange, Inc., 600 E. Baltimore street, Baltimore, Md.

ALL MAKES TYPEWRITERS sent ten days' free trial without deposit. Every part guaranteed. Get special price-list. W. Whitehead, 188 North La Salle, Chicago, Ill.

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FREE FACTORY SITES in the promising town of Dalcour, near New Orleans, in the heart of the citrus-fruit and truck-raising country. Particularly attractive to canneries, box factory, ice factory. Fidelity Land Co., Ltd., 705 Gravier St., New Orleans, La.

INDUSTRIES WANTED

MISCELLANEOUS CONROE, TEXAS, wants a barrel and box factory, farm implement factory, ice and electric-light plant, wagon factory. Have fine artesian water for steam. Address Secretary Progressive League.

NORFOLK, VIRGINIA, is a growing, thriving city; splendid climate; eight trunk-line railroads; great harbor; steamships to domestic and foreign ports and many other advantages; liberal inducements for manufacturing plants; home seekers and those who want to build and sell houses. Address Ballentine Realty Corporation, Norfolk, Va.

WANTED—Men with capital to buy interest in established concerns and to establish manufacturing plants. Asheville has 10,000 hydro-electric horse-power; is the center of the hardwood district of the South and East; two furniture plants here; want chair, table and stove factories; hosiery and knitting mills; pulp mills; abundant cheap labor; low cost of living; fine water. Board of Trade, Asheville, North Carolina.

HOTEL FOR SALE

HOTEL PROPERTY FOR SALE.—Belongs to an estate; is located in a city in Virginia where railroads terminate and is across the street from the union depot. At least \$10,000 must be paid cash. Address W. W. Hamilton, Administrator, 1010 Court St., Lynchburg, Va.

INDUSTRIAL PLANTS FOR SALE

LUMBER YARD AND PLANING MILL. **FOR SALE.**—Lumber yard and planing mill, up-to-date equipment, and the only plant of its kind in a prosperous and growing city of 7000 inhabitants; now going and doing a good business. This is a great opportunity for anyone desiring to engage in this business to investigate quick. Mathews-Curtis Co., Clifton Forge, Va.

SAW AND PLANING MILL. **FOR SALE.**—Complete saw and planing mill; capacity of sawmill, 25 M. feet daily; planing mill, 40 M. feet daily; all in running order. Address P. O. Box 782, New Berne, N. C.

BAND SAWMILL. **HEAVY BAND SAWMILL OUTFIT**, complete, including power, tools, lumber trucks, etc.; almost new; bargain price. Address W. S. Dunbar, Rosenberg, Texas.

FURNITURE FACTORY

WONDERFUL BUSINESS OPPORTUNITY for experienced furniture manufacturer. We are offering for sale entire furniture plant, consisting of machinery for manufacturing mattresses and for upholstering, together with about \$10,000 worth of raw material, new two-story factory building 60x300 feet, office building and equipment, factory site, and fourteen city lots. Reasonable terms can be arranged to responsible purchasers. If you are interested, let us hear from you at once. Address Caskie, Percy & Gould, Trustees, Altavista, Va.

OIL MILL AND GIN. **FOR SALE.**—In one of the best sections in South Carolina, one oil mill (20-ton capacity), also one gin, capacity 60 bales in 24 hours; all in good condition. This is one of the best interior seed points in the State; situated at St. Paul, S. C. Clarendon Co. For further information address A. L. Lesane, Sumter, S. C.

FLOURING MILL. **FOR SALE.**—1200-barrel flouring mill plant; 150,000 bushels elevator capacity; Hopkinsville, Ky.; fine property; cheap; good terms. Rush C. Watkins Co., Realty Bldg., Louisville, Ky.

Classified Opportunities

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FOR SALE—Splendid manufacturing plant, located on Pennsylvania Railroad, and another railroad has switch into plant; thirty good houses; large mill building; 700 acres of land; in good town; good school and churches; houses and plant connected up with city spring water. Will be sold cheap. Address H. A. Avery, Coudersport, Penna.

STEAM LAUNDRY

FOR SALE—First-class steam laundry, in use only short while; will sell machinery alone or entire outfit, including building and lot of land; cheap. M. P. Owen, Barnesville, Ga.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

RELIABLE, accurate and definite information regarding the possibilities for investment in high-grade land propositions in Mississippi and Louisiana; fourteen years successful operation; references exchanged. Walter G. Hodges, Meridian, Miss.

BEFORE YOU BUY LAND or make an investment in the South or Southwest send for copy of my "Investor and Land Buyer" with list of splendid properties for sale; free on application. Jo A. Parker, Parma, Mo.

HOUSES AND LANDS FOR SALE in the Valley of Virginia. Apply to Dr. M. L. Garrison, Front Royal, Va.

FOR SALE OF TRADE—60,000 acres, Southeast Georgia, \$5. Timber lands, phosphate and bauxite properties for sale. S. T. Handle, Real Estate Investments, Paducah, Ky.

HUNDRED AND FORTY THOUSAND ACRES RANCH LANDS, Val Verde county, Texas (has natural growth rubber plant), \$1 acre, 10,000 acres So. Ala., \$4.50 acre, 18,000 acres near Hastings, Fla., famous Irish potato section, \$4 acre. Power & Brooks, Montgomery, Ala.

HOUSTON, TEXAS.—120 acres between the city and the great \$10,000,000 Rice Institute ripe for subdivision; 500 per cent profit awaits a live investor; best proposition ever offered in this fast-growing city. Write for full particulars. W. T. Dickey, Owner, 808 Paul Building, Houston, Texas.

FARMS FOR SALE in Tidewater Virginia, where we have the best all-the-year-around climate in America, good soil, good markets and the best shipping facilities; also timber and mineral lands. L. Jackson, 215 Arcade Bldg., Norfolk, Va.

EAST TEXAS CUT-OVER LANDS will greatly enhance in value within next few years. We have some attractive offerings in this and other classes of lands in Texas and Southwest Louisiana. Correspondence with interested parties invited. Singleton Bryan & Co., Beaumont, Texas. Established 10 years.

COAL LAND FOR SALE

COAL—14,000 acres of the choicest coal lands in West Virginia. R. B. Chaffin & Co., Inc., Richmond, Va.

CUT-OVER LANDS

CUT-OVER TIMBER TRACTS.
50,000 acres cut-over pine lands, Miss. \$4.50
30,000 acres cut-over pine lands, La. 6.00
75,000 acres cut-over pine lands, Tex. 5.00
18,000 acres cut-over hardwoods, La. 4.50
Marsh Lands for Reclamation.
60,000 acres in a body, Gulf Coast of La. 3.00
Timber Lands.
20,000 acres L. L. Y. pine, Fla., cut 3500 ft. 7.00
15,000 acres L. L. Y. pine, Ala., cut 7000 ft. 21.00
30,000 acres hardwood, cut 10,000 ft. (60%)
Finest red gum proposition South. 10.00
Wm. R. Taylor, 508 Perrin Bldg., New Orleans, La.

CYPRESS TRACT WANTED

WANTED—Large tract of cypress timber; size immaterial; title must be good, tract compact and within reasonable distance of a railroad. D. E. Peiper, Fort Lauderdale, Fla.

TIMBER LAND FOR SALE

4000 ACRES hardwood timber land in Catahoula parish, Louisiana; navigable river on each side of tract; will cut at conservative estimate, fifteen million feet of lumber, almost all of which is white and red oak and gum; the soil is alluvial, buckshot and sandy loam; will make magnificent agricultural land after the timber is removed; a railroad now under construction runs right by the tract, which could be made an A-1 colonization project. Price \$15 per acre, which buyer can get out of timber alone; terms easy. Barney & Hines, Inc., 1253 Central Bank Bldg., Memphis, Tenn.

TIMBER LANDS.—Five thousand acres of timber in Preston county, West Virginia. This is a good tract of average size and good quality. Faces on Cheat River for a half mile. Located on M. & K. R. R. with same rates as B. & O. Freight rates Pittsburgh, Pa.; New York, 17c; Philadelphia, 15c. All down-hill haul. Principal kinds of timber, poplar, red oak, white oak, chestnut, hemlock, chestnut oak. Will cut over 40,000,000 feet. Write for detailed description and price of this excellent tract. West Virginia Tri-Products Company, Howard L. Swisher, President, Morgantown, West Virginia.

STANDING PINE FOR SALE.—Forty to fifty millions feet standing pine timber in Marengo county, Alabama, bordering on the Tombigbee River and lying between two railroads. Mostly original growth. This is strictly a pine proposition. Address Box 27, Salisbury, Maryland.

ARKANSAS.—1240 acres of first-class timbered land in two miles of railroad, estimated to cut:
5,525,000 feet white oak.
745,000 feet ash.
650,000 feet hickory.
665,000 feet hack berry.
Total..... 7,485,000 feet.
Price \$20 per acre; easy terms. Address W. B. Lane, Hope, Ark.

TIMBER FOR SALE.—1000 tracts, all sizes, located in the South. All kinds of pines and hardwood. If you mean business, write me. J. C. Bollinger, Hagerstown, Md.

85 ACRES, adjoining railroad, near Richmond, Va., all in good second-growth timber. The saw timber and cord wood alone worth enough to almost pay for the place and get the land nearly free; watered by two branches; \$2000. Green & Redd, 30 North 9th street, Richmond, Va.

FOR SALE—160 acres of timber land, two miles of railroad. Apply to Thos. S. Carlton, Arcadia, Fla.

OVER 200,000,000 feet of hardwood timber in North Carolina; large percentage poplar and white pine; valuable property; safe investment. Price \$400,000 in fee.
Several hundred million feet of hardwood timber with new and up-to-date mill in Georgia; a bargain. Price on application.
40,000,000 feet, nearly all pine, with complete mill, on railroad in Eastern North Carolina; fine logging proposition; a cheap and very desirable property; important to sell at once. Price \$87,000.
15,000 acres, in one body, in Northern Georgia, 1½ miles from railroad; easy logging; 4000 to 5000 feet per acre. Price \$9 per acre in fee.
12,000,000 to 15,000,000 feet, nearly all pine, from 1 to 2 miles from railroad, in Southern Virginia; fine logging; rate to Pittsburgh, 18½c; Philadelphia, 16c. Price \$45,000.
Other fine timber properties. Write for data. H. W. Hilleary & Co., 729-30 Southern Building, Washington, D. C.

TIMBER FOR SALE

FOR SALE—40,000,000 feet of first-class hardwood and cypress, situated right on a railroad. Apply to E. J. Iles, Alexandria, La.

YELLOW LOCUST POSTS

FIVE THOUSAND yellow locust posts for sale; mountain grown; the most durable and valuable of all posts; large sizes for gate posts; all sizes for fencing. Pantops Orchard Co., Charlottesville, Va.

FARM AND TIMBER LANDS

AT A GREAT BARGAIN.—40 acres virgin pine land, including a two-acre orange grove of large bearing trees. Only two miles from Lakeland (the wonder city of South Florida). For prices and terms apply to owner, Morris G. Munn, Lakeland, Fla.

FARM AND TIMBER LANDS.—We have attractive offerings in farm, yellow pine and hardwood timber lands. We also handle coal and ore properties. Correspondence from interested parties invited. Provident Trust & Security Co., Land Dept., Walton Bldg., Atlanta, Ga.

I HAVE BARGAINS IN TIMBER TRACTS, large colonization propositions, cut-over lands and reclamation tracts in any size wanted up to 150,000 acres from \$2.50 per acre up.

Wm. R. Taylor, Land and Timber Investments 508 Perrin Building, New Orleans, La. Established 1898. Sales over \$6,000,000.

COLONIZATION LANDS

ALABAMA COLONIZATION LANDS.—Large tracts unimproved lands near Mobile; great port; also in other parts of State; low prices; no better propositions in South; productive soil; a present opportunity. Write us. Alabama State Agricultural Land Co., Center, Alabama.

FOR SALE—10,000 acres smooth, level, rich red and black sandy loam land in one body, 1½ miles from railway station, 30 miles from San Antonio, in famous Bermuda onion belt; fenced; 3 wells; houses; first class for colonization; \$12.50 per acre; \$2 acre cash, balance 20 years. Address C. H. Hinton, Lane City, Texas.

PLANTATIONS FOR SALE

MISSISSIPPI.—3555 acres of good hill cotton land for sale; now in successful operation; well supplied with negro labor. The plantation lies between two branches of the Illinois Central R. R.; nearest shipping point four miles from the dwelling. The land covers within half mile of the shipping point. A sufficiency of cabins for tenants, stables, cribs, cotton pens and all outhouses; 45 head of mules and horses, cows, farming implements and feedstuff. Price very low; terms good. Address A. C. Leigh, Grenada, Miss., bona-fide owner.

FARM, FRUIT AND TRUCK LANDS

ALABAMA

C. C. MECHEM, Bank of Mobile Building, Mobile, Ala., makes a specialty of handling small tracts of land on easy terms. He guarantees his titles in the Title Insurance Co. of Mobile, Alabama, charges no interest on deferred payments and pays all taxes until deed is delivered. Call and see him.

ALABAMA SNAP.—640 acres; unincumbered; cut-over; 5 acres clear; fine spring; near M. & O. R. R.; will make good ranch; especially adapted for fruit and pecans; two colonization companies close by are retelling in small tracts, getting \$25 per acre. I will sell this at \$7 per acre; ½ cash; balance 1 and 2 years; discount for all cash. If looking for a good investment, address F. W. Moehle, 419 Title Guaranty Bldg., St. Louis, Mo.

ARKANSAS

298 ACRES OF LEVEL VALLEY LAND; 200 acres in cultivation; 3 houses, 3 barns, 5 wells; 1 mile to school; 4 miles to railroad; R. F. D.; land will grow all kinds of grain, grasses and cotton. Price \$9000. Write for further information, stating your wants. Ham & Rich, Batesville, Ark.

FLORIDA

FLORIDA FARMS ARE FORTUNES.—Our soil similar to fertile sections Iowa, Missouri; easy-payment plan. Write for booklet. Milton Land & Investment Co., Marianna, Fla.

CITRUS FRUIT LAND.—We have one of the finest undeveloped tracts in Southern Florida; in the beautiful lake region of Polk county, just east of Florence Villa; near new line of A. C. L. Railway; about 2700 acres; heavily timbered. Parties wanting colony location of real merit should investigate this. Full description and plat on application. Marcus E. Sperry & Co., Tampa, Fla.

GEORGIA

ELEVEN HUNDRED ACRES, eight miles from Savannah; two railroads; water facilities; paved road; half of acreage clear. Apply for soil survey and get facts and figures as to just what is and can be produced on this soil. Write F. J. Skeffington, Box 583, Savannah, Ga.

MISSISSIPPI

FOR SALE—FARM LANDS in the famous prairie alfalfa belt of Mississippi, from truck patch and dairy farm to cotton and alfalfa plantation, \$20 to \$40 per acre; will produce anything. Full particulars from Crutcher Bros., 310 2d Ave. North, Nashville, Tenn.

TEXAS

IRRIGATED sugar-beet and alfalfa lands in Hale county, Texas; soil also especially adapted to apples, peaches, grapes, all kinds of berries, wheat, broom corn and flax. Our booklet showing 60 1911 farm and city scenes mailed on request. Shallow Water Land Co., Plainview, Texas.

THE BLACK LANDS OF NORTH TEXAS are justly famous as the best in the world for the production of cotton, corn, wheat and oats—not one crop, but four. Once Goodwin's Denton Creek Subdivision consists of more than 8000 acres of this land, situated on the Denton and Wise county line, 50 miles northwest of Dallas, and is offered at reasonable prices—thirty to forty dollars per acre—and upon such terms that any man with a few hundred dollars cash can easily meet. The gradual and steady enhancement in value of such land should appeal to investors, while the very easy terms upon which it is offered should appeal to the farmer without a home. Address Fount Ray, Decatur, Texas.

THE FRIO VALLEY WINTER GARDENS, La Salle county, Southwest Texas, a colony of 100,000 acres level rich black sandy loam in famous artesian belt; grow oranges, figs, Bermuda onions. We are opening Fowlerton, a new town on new railroad in heart of the colony. Guaranteed improvements on town-site. A 10-acre farm and free residence lot on terms of \$15 cash; balance \$10 monthly. Write for booklet A, prices, plats, etc. Fowler Brothers Land Co., Frost Building, San Antonio, Texas.

2464-ACRE FARM on Lavaca River, 5 miles north of Edna, Texas; 500 acres river bottom field; 10 small rent houses; one 10-room ranch house; private phone line out of Edna; all fenced; several wells; 3000 bearing pecan trees; will sell or trade for good city property at \$35 per acre. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

COLORADO BOTTOM FARM.—2000-acre Colorado bottom farm, on the railroad; one thousand acres in cultivation; highly improved; near good town; \$30 per acre; easy terms; will produce one hundred and fifty bushels of potatoes to the acre, seventy-five bushels of corn, bale of cotton to the acre; nothing better in Texas. Norton Realty Co., Scanlan Building, Houston, Texas.

10,000 ACRES Nueces River bottom land; all subdivided into small tracts; very best truck and fruit land in Southwest Texas; will sell in small tracts or in a body. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

FOR SALE—A BARGAIN.—3340 acres fine farm land in Dimmit county, Texas, the great truck and onion country. This land is in a solid body, fenced, has house, barn, corrals, wells, windmills and tanks; 70 acres in cultivation; 85 per cent of balance tillable. B. G. Lane, owner, care Texas Life Insurance Co., Waco, Tex.

VIRGINIA

BARGAIN SALE.—One of the leading stock and grain ranches in county; large improvements; creek and spring watered; plenty timber; grand colonial dwelling, commodious barns and stables; well fenced; near town and railroads; R. F. D.; 440 acres. Easy terms for quick sale. For full particulars, Box 72, R. F. D. No. 3, Crewe, Va.

MACHINERY AND SUPPLIES

LOCOMOTIVE FOR SALE.—Two-ton, 32 horse-power, 24-inch gauge; only run three months; good as new; will be sold cheap. Address Otto Boettger, Lincoln Hotel, Lancaster, Pa.

FINANCIAL

FOR SALE—I have for sale 8 per cent. mortgages on improved farms in North Louisiana; none better. W. A. Jones, authority on North Louisiana Lands, Shreveport, La.

FOR SALE—7½ first mortgage real estate bonds. Kauffman Investment Co., 735 American National Bank, Oklahoma City, Okla.

WHERE security and high dividend earnings are desired the 7 per cent. cumulative preferred stock of Virginia Farm Development Corporation will meet the demand. The stock is equivalent to other first mortgage bonds. Particulars on application. Southern Finance Co., Norfolk, Va.

FIRST MORTGAGE LOANS cautiously selected in Texas; 2 to 5 years, 8½, \$1000 to \$5000, to suit investors. Any well-informed man can tell you of the substantial values in Texas and the Southwest. This company was especially organized for this line of business and we give it most careful attention. First Mortgage Trust Company, San Antonio, Texas.

MORTGAGE LOANS, carefully selected, on good cotton and corn farms in Southern Oklahoma; 5-year, 8½, \$250 to \$2500, to suit investors. This company's population, 25,000; assessed values, \$10,000,000; one of largest cotton producers. Can place your money very safely; 25 years' experience; 10 years bank cashier here; intimately acquainted with lands, people, conditions; abundant references; circular. Write J. G. James, Roff, Okla.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER and Patent Lawyer, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 20 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

PATENT YOUR IDEAS.—\$100,000 offered for one invention. \$4500 for another; book, "How to Obtain a Patent" and "What to Invent," sent free; send rough sketch for free report as to patentability; patent obtained or fee returned. We advertise your patent for sale at our expense. Chandlee & Chandlee, patent attorneys, 978 F street, Washington, D. C.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free. \$1,000,000 offered for one invention; \$16,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

PATENTS FOR SALE

WE HAVE recently secured the following patents. Address all communications to Sales Dept., Victor J. Evans & Co., Washington, D. C.: Wm. J. Oliver, car step; Alfonso Sagrarnoso, fender; Edward Savoy, rail joint; C. S. Williams, shoe polisher; Enoch J. Williams, hay loader and rake; G. E. Menke, loading device; Samuel M. Kohr, automatic fire alarm; Edw. A. Krider, wagon hub; C. W. Schumann, wire stretcher; Geo. H. Metcalf, wheel; A. E. Marsh, cot free; E. R. Miller, frame; John Nordlund, fish bait; V. W. Thompson, flame gauge; Mrs. Sarah Anderson, cake warmer; R. H. Conley, automobile switch; John F. Harris, foot pocket; Calvin J. Cole, elevator emergency lock; Otto Beth, biplane kite; W. E. Breisford, hinge; J. Geo. Turnbull, bracket; A. H. Luebeck, safety fenders; Warren Moore, harvester attachment; Clarence Shaw, nut lock; P. S. Moe, brake mechanism; Geo. Melber, washboard; Mrs. Amelia E. LeFord, disinfectant device for mouthpieces; Wm. H. Newville, clothes stick.

FOR SALE—Two patents for the best dishwasher on the market, for hotels and restaurants; capacity, 3000 to 6000 dishes per hour; both washes and rinses at one operation. Apply to Thomas Clark, Hotel Lincoln, Lancaster, Pa.

PROPOSALS

PUBLIC BUILDINGS,

CONSTRUCTION BONDS

MISCELLANEOUS.

GOVERNMENT PROPOSALS

PROPOSALS FOR STRUCTURAL STEEL. Rivets, Galvanized Conduit, Electric Cable, Wire, Fuses, Sockets, Plugs, Dry Cells, Carbons, Vulcanized Red Fiber, Wire Solder, and Wire Clamps. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. May 20, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 707) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La.; and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala.; and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS FOR LUMBER. SEALED proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. May 15, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 708) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; and 614 Whitney-Central Building, New Orleans, La.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala.; and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., April 24, 1912. Sealed proposals will be received at this office until 3 o'clock P. M. on the 5th day of June, 1912, and then opened, for the construction (except mechanical equipment) of the United States postoffice and courthouse at Muskogee, Okla. The building to be of fireproof construction, four stories in height, stone faced, and copper roof, with a ground area of approximately 20,400 square feet. Drawings and specifications may be obtained from the custodian of site or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., April 18, 1912. Sealed proposals will be received in this office until 3 o'clock P. M. on the 31st day of May, 1912, and then opened, for the construction, complete (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and lighting fixtures), of the United States Postoffice at Charleston, Pa. This building is to have two stories and basement of approximately 4500 square feet ground area; stone faced, slate roof, and fireproof construction except the roof. Drawings and specifications may be obtained from the custodian of the site or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

U. S. ENGINEER OFFICE, GALVESTON, TEXAS. April 18, 1912. Sealed proposals for dredging the Houston Ship Channel will be received at this office until 12 M. May 15, 1912, and then publicly opened. Information on application. EARL I. BROWN, Major, Engrs.

U. S. ENGINEER OFFICE, JACKSONVILLE, FLA. April 15, 1912. Sealed proposals for construction of the motor survey launch "Captain J. J. Meyer" will be received at this office until 12 M. May 15, 1912, and then publicly opened. Information on application. J. R. SLATTERY, Capt., Engrs.

U. S. ENGINEER OFFICE, GALVESTON, TEXAS. May 1, 1912. Sealed proposals for constructing concrete sidewalk, brick pavement, concrete curbing and drains at Fort Travis Reservation, Port Bolivar, Galveston, Texas, will be received here until 12 o'clock noon May 31, 1912, and then publicly opened. Information on application. EARL I. BROWN, Major, Engrs.

SEALED PROPOSALS in triplicate for alterations in sewer system will be received at the office of the Constructing Quartermaster until 11 A. M. May 10, 1912, and then opened. Certified check or surety company's guarantee for 10 per cent. of the amount must accompany each bid. Plans and specifications will be furnished upon application, and a deposit of \$5 must accompany each request to insure safe return. The Government reserves the right to reject any or all of the bids. Proposals should be indorsed "Proposals for alterations in Sewer System," and addressed to the Constructing Quartermaster, Fort Myer, Virginia.

GOVERNOR'S ISLAND, N. Y. H. April 15, 1912. Sealed proposals, in triplicate, for furnishing Coal required in Eastern Division during year ending June 30, 1913, will be received here until 10 A. M., May 15, 1912. Information furnished on application. Chief Quartermaster.

NEW BOND OFFERINGS

Notice of Bond Sale

Leakesville, Miss.
The undersigned, Treasurer of Greene County, Mississippi, will receive sealed bids for the sale of fifty ten-year 5 per cent. interest-bearing Greene County Road Improvement Bonds, in the denomination of \$500, up to noon of May 25, 1912, at the office of the Treasurer of said county at Leakesville, Miss. A certified check for one-tenth of the amount bid for is required with each bid. The undersigned Treasurer reserves the right to reject any and all bids.
This April 5, 1912.

JOHN D. TURNER,
Treasurer.

Sale of Bonds

Bids are wanted by the undersigned at No. 1207 Hampton street, Columbia, S. C., for \$25,000 of first mortgage gold bonds of the State Agricultural and Mechanical Society of South Carolina, said bonds being of the denomination of \$500 each, maturing 25th of August, 1931, secured by a mortgage of the tract containing one hundred (100) acres whereon are situated the buildings and grounds of said Society, and bearing interest at the rate of six per centum per annum, payable semi-annually. Bids will be received for all of said bonds or any part thereof.
D. G. ELLISON,
Treasurer of State Agricultural and Mechanical Society of South Carolina.

\$25,000 6% Bonds

The Board of Commissioners of Martin County, N. C., offers for sale twenty-five thousand dollars of its 6 per cent. Williamston Township Road Bonds, same being the remaining amount unsold of forty thousand dollars, authorized by an act of N. C. Legislature, session 1911, and by a vote of Williamston township. Said bids will be received until June 15, 1912. Certified check for one hundred dollars must accompany each bid for \$5000 or less. Bids to be sealed and can be made for whole or any part of said amount. Said bonds are in denomination of \$500 each, and are all payable 30 years after date. Interest semi-annual.
Address
H. M. BURRAS,
Chairman Board of Commissioners,
Williamston, N. C.

For Sale—Bonds City of Chattanooga, Tenn.

\$300,000 floating indebtedness and sewer bonds.
\$250,000 public park bonds.
Sealed bids will be received until 3 o'clock P. M. on Tuesday, May 14, 1912, for two series of coupon bonds of the city of Chattanooga, Tenn., as follows:

One issue of \$300,000, dated December 20, 1911, denominated floating indebtedness and sewer bonds of the city of Chattanooga, Tenn., of 1911, issued for the purpose of paying off the floating indebtedness of the city of Chattanooga, Tenn., existing on July 5, 1911, and for improving, extending and enlarging the sewerage system of said city.

One issue of \$250,000, denominated public park bonds of the city of Chattanooga, Tenn., dated May 1, 1912, issued for public park purposes.

All of said bonds are of the denomination of \$1000 each, due thirty years after their date, bear interest at the rate of four and one-half (4½) per cent. per annum, payable semi-annually, principal and interest payable at the National City Bank, New York City.

Bids will be received for all of both issues of said bonds only. All proposals must be accompanied by certified check, payable to the order of J. M. Payne, City Treasurer, for 1 per cent. of the amount of bonds bid for, the same to be retained by the city as liquidated damages in case of failure of the successful bidder to accept and pay for said bonds.

The acts under which both of the foregoing issues of bonds are made provide for a special tax levy upon all the taxable property of the city sufficient to pay the interest and provide a sinking fund for the payment of principal at maturity.

The validity of said bonds is being examined by Messrs. Caldwell, Maschick & Reed of New York City, whose opinion will be delivered to the successful bidder. The fees therefor will be paid out of the general revenues of the city.

The bonds will be prepared and certified as to genuineness by the Columbia Trust Company of New York. Bids must be made on blanks to be furnished on application to the City Treasurer or to said trust company without conditions, interlineations or erasures.

The bonds will be delivered to the successful bidder at the office of the Columbia Trust Company, in the city of New York, on the 25th day of May, 1912, at 11 o'clock A. M.

The right is reserved to reject any and all bids.

Address bids to
T. C. THOMPSON, Mayor,
Chattanooga, Tenn.

\$15,000.00 Summerville, (S. C.) School Dist. No. 18 Bonds

Municipal bonds for sale. \$15,000 bond issue of School District No. 18 (Summerville), Dorchester county, S. C.; denomination \$500; 20-year coupon bonds; interest 6 per cent. semi-annually. Bonds and coupons payable in New York. Taxable property about \$1,000,000. No other bond issue over territory embraced. Non-taxable in South Carolina.

Bids received on or before May 10, 1912, at office of Legare Walker, attorney, Guerin Building, Summerville, S. C. Bids received for entire or part of issue. Right reserved to reject any and all bids.

N. C. Drainage District Bonds, Issued Under the Laws of the State, For Sale

Sealed bids will be received at the office of the undersigned at Goldsboro, N. C., until May 4, 1912, at 12 o'clock M., for the purchase of thirty thousand (\$30,000) dollars of Wayne County Drainage District bonds to be issued in accordance with the laws of the State of North Carolina, Public Acts of 1909, as amended by Public Laws of 1911, bearing interest at 6 per cent. per annum, payable semi-annually, said bonds payable in ten (10) equal installments; the first installment of principal to be due and shall mature at the expiration of three (3) years from date of issue and one (1) installment for each succeeding year for nine (9) additional years, to be issued in denominations to suit the purchaser, and payable at such time and place as may be designed by purchaser upon acceptance of bid.

These bonds are exempt from all county or municipal taxation of assessment, general or special, and the interest thereon shall not be subject to taxation as for income, nor shall said bonds be subject to taxation nor the coupons thereon, when constituting a part of the surplus of any bank, trust company, or other corporation; and are deductible from the assets of such corporation in ascertaining the taxable value of the shares of such corporation.

Bids invited for the whole or any part of said bonds.
Certified check of proposer in the sum of \$500 required to accompany bids for the whole of such issue, or proportional part less than for whole.

Right to reject any and all bids reserved.
Bidders may submit form of bonds with bid, or the same will be issued in form requested by successful bidders at the time of acceptance of bid.

The lands affected by this act are about three thousand acres, and are easily worth one hundred thousand dollars.

Any further information concerning legality of issue may be had by application to W. T. Dorch and Wentworth W. Pierce, Attorneys for the Board of Drainage Commissioners, Goldsboro, N. C.

All bids must be submitted to the undersigned at his office at Goldsboro, North Carolina, by May 4, 1912.

This the 6th day of April, 1912.
JOHN R. WOOTEN, Chairman,
Board Commissioners of Wayne County Drainage District Number One.

PAVING, SEWERS AND WATERWORKS

Street Paving

Augusta, Ga.
Sealed proposals, addressed to the City Council of Augusta, Ga., will be received by the Streets and Drains Committee until 4 P. M., Eastern time, Tuesday, May 7, 1912, for furnishing all materials, tools and labor and constructing, complete, approximately thirty thousand square yards of street paving on 12th street from Broad street to Milledgeville road, on Telfair street from 8th to 9th, and in Barrett Plaza from Telfair to Walker street. Bids on various kinds of pavement will be received, and bond of ten thousand (\$10,000) dollars will be required from the successful bidder.

Cash or certified check for five hundred (\$500) dollars must accompany each bid as a guarantee of good faith.
Payment will be made in cash on monthly estimates. The city reserves the right to reject any or all bids.

Specifications can be seen by applying at this office on or after April 22, 1912.
NISBET WINGFIELD,
City Engr. and Comr. Pub. Wks.

To Paving Contractors

Bainbridge, Ga.
Sealed proposals on blank forms furnished by the city and addressed to "The Mayor and Board of Aldermen," Bainbridge, Georgia, will be received until 7:30 P. M. May 15, 1912, for furnishing all material, equipment and labor for the following work:

Approximately 22,000 square yards of street paving (Vitrified Brick, Wood Block, Bitulithic, Granatoid and Asphalt will be considered), with all necessary drainage and granite curb as specified.

Each bid must be accompanied by a certified check made payable to the Mayor for twenty-five hundred (\$2500) dollars.

Right is reserved to reject any or all bids. Plans and specifications can be seen at the office of the consulting engineers, or specifications may be obtained by writing them at Box No. 582, Savannah, Ga.

J. W. CALIAHAN, Mayor,
W. O. FLEMING, City Clerk.
Consulting Engineers:
H. S. JAUDON ENGINEERING CO.,
Atlanta, Ga. Savannah, Ga.

Bituminous Paving

Pine Bluff, Ark.
Sealed bids will be received by the undersigned at the office of C. M. Philpot, County Judge, Pine Bluff, Ark., until 2 P. M. Wednesday, May 15, 1912, for resurfacing with bituminous macadam or concrete (penetration or mixing method) approximately 25,500 square yards of old gravel roadway. Specifications and full information may be obtained and plans seen at the same office. Certified check for \$500 must accompany each bid.
The right is reserved to reject any or all bids.

BOARD OF IMPROVEMENT,
PAVING DISTRICT NO. 29,
PINE BLUFF, ARK.
By C. M. PHILPOT, President.

Sewer and Paving Work

Lakeland, Florida.
Proposals will be received by the undersigned until three o'clock P. M. of May 20, 1912.

The work will include supplying all materials and labor necessary to construct sanitary sewers, with appurtenances, including a sewage treatment plant.

Also for paving, curbing and storm-drainage work.

Specifications may be procured and plans and profiles with details seen at the office of the Engineer, Candler Building, Atlanta, Georgia, or at No. 215 Drane Building, Lakeland, Florida, on and after May 10, 1912.

Proposals will be opened publicly with the usual rights reserved.

BOARD OF BOND TRUSTEES,

C. G. Memminger, Chairman,

Lakeland, Florida.

JAMES NISBET HAZLEHURST,

Consulting Engineer,

Atlanta, Georgia.

Sewer Construction

Sealed proposals, addressed to Hon. Bridges Smith, Clerk City Council of Macon, Georgia, will be received by the Sewer Committee until Tuesday, May 28, 1912, 12 o'clock noon, for furnishing all labor and material and constructing approximately six (6) miles of 8", 10" and 12" sanitary sewers, with all manholes and flush tanks.

Cash or certified check for \$500 must accompany each bid as a guarantee of good faith.

The successful bidder will be required to give bond as called for in specifications.

Plans and specifications may be had by applying to J. J. Gaillard, City Engineer.

The right is reserved to reject any and all bids.
R. S. THORPE,
Chairman Sewer Committee,
Macon, Ga., April 24, 1912.

Sewer Construction

Town of Kingwood, West Virginia.
Sealed proposals, addressed to the Mayor and Council of Kingwood, West Virginia, will be received by the Council until Saturday, May 11, 1912, at 12 o'clock noon, for furnishing labor and material and constructing approximately 19,000 feet of Sanitary Sewer, with all connections, etc., to be laid with Standard Vitrified Salt Glazed Sewer Pipe, ranging from 8 to 18 inches in size. Also at the same time proposals will be received for excavating for, laying and constructing said sewer and furnishing sand and cement for the laying of same, the Town of Kingwood to furnish pipe delivered along the various lines of sewer.

Cash or certified check for \$250 must accompany each bid as a guarantee of good faith.

The successful bidder will be required to give bond for \$5000 conditioned for the proper performance of the work.

Plans and specifications may be seen by applying at the Mayor's office in said town.

The right is reserved to reject any or all bids.

VESTER B. DUNN,
Mayor.

Proposals for Paving, Sewers, Etc.

Sealed proposals will be received at the office of the undersigned, in the City of Johnson City, Tenn., until 7 P. M. May 16, 1912, for constructing sewers, concrete curb and gutter and street paving with brick, asphalt, bitulithic, wood block, granitoid or concrete, for Improvement District No. 10, according to plans and specifications in the office of the City Engineer.

Approximate Quantities.
5300 cubic yards Excavation.
16,600 square yards Street Paving.
6700 linear feet Curb and Gutter.
3900 linear feet 6" Sewer Connections.
2900 feet 8-inch Sewer.
Each bid must be accompanied by a certified check equal to 10 per cent. of the amount of the bid as a guarantee of the good faith of the bidder.

Bids are asked for payable either in cash or 5½ per cent. bonds, at the option of the city.

The right is reserved to reject any or all bids.

Bids will be opened at a regular meeting of the City Council Thursday, May 16, 1912, at 7 P. M.

P. F. McDONALD,
City Commissioner.
WM. R. POWDER,
Recorder.
Johnson City, Tennessee.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

Grading

Sealed proposals will be received by the Roland Park Company until about May 6, 1912, for several sections of grading of approximately 4.5 miles of streets, several acres of lots, together with clearing and the stripping of top soil. Roughly, 250,000 cubic yards of excavation. The right is reserved to the company to reject any and all bids and to waive defects.

Information for bidders and grading diagrams may be obtained at the company's offices in Roland Park, Baltimore county, Maryland, after April 27, 1912.

Resurfacing

Office of Richland County Supervisor,
Columbia, S. C., April 26, 1912.

Bids will be received in this office until 10 A. M. Friday, May 17, 1912, for resurfacing the road from the city limits of Columbia to Hyatt Park (a distance of 7648 feet, the road being approximately 25 feet wide) with an artificially bound macadam wearing surface.

The present road is a water-bound granite macadam, in fair state of preservation, and with not more than 2 per cent. of patching; will, on being spiked up and reshaped, make an excellent foundation for the artificially bound macadam wearing surface.

Instructions to Bidders.

The basis for submitting bids must be specified, prices per square yard for the artificially bound macadam wearing surface (stating the proposed thickness of said surface, and the kind of stone to be used in the construction of said surface), for spiking up the present road and reshaping and preparing it for the foundation for the wearing surface, and a specified price per cubic yard for all stone necessary to repair and prepare the present road for receiving the wearing surface; also unit prices for any other items that may be necessary to the particular type of construction.

With the bids must be a written guarantee that the road will withstand all ordinary conditions of traffic and weather, such as usually tend to develop dust, mud, ruts and holes, and be resistant to the disintegrating forces exerted on the surface by motor cars running at high rates of speed for a specified term of years.

Also, bids will be received for supplying the artificial binder, the road to be constructed by the county forces; or the binder may be made separately for the binder and the construction. In case the bid is made for the binder only, each bid must be accompanied with full instructions for the application of same, and a guarantee as to the merits of the binder.

Work must commence within 15 days of date of signing contract and completed within 90 days of later date.

The right to reject any or all bids is reserved.

For further information address

W. F. MULLER,
Supervisor Richland County,
Columbia, S. C.

PUBLIC BUILDINGS

Church

The building committee of the Drummond Town Baptist Church invites sealed proposals for the erection and completion of a church building according to plans and specifications now on file in the office of A. J. Lilliston, at Accomac, Virginia, with whom all bids must be filed on or before May 15, 1912, with a certified check for one hundred dollars, payable to A. J. Lilliston, as evidence of good faith on his part that if his bid is accepted he will enter into a contract at once to build said church in accordance with said plans and specifications, and will further execute a bond for 50 per cent. of the contract price with some good and reliable bonding company authorized to do business in this State, as surety therein, conditioned for the faithful performance of said contract. The committee reserves a right to reject any and all bids.

A. J. LILLISTON,
Accomac, Va.

New Jail

NOTICE TO CONTRACTORS.

Manchester, Clay County, Ky.
The Board of Jail Commissioners for Clay County invites sealed proposals for the erection of a new jail on the county's property, agreeable to plans and specifications heretofore adopted by said committee. Said plans are numbered 1065 and furnished by the Pauly Jail Building Company.

Said plans and specifications are on file in the County Judge's office in Manchester, Ky. A copy of said plans and specifications will be furnished to anyone wanting to bid on said jail by leaving ten dollars or a certified check for said amount with T. J. Rawlings, Chairman of the Jail Committee. Said money to be returned when the plans and specifications are returned in good order.

Bids will be received until six o'clock P. M. on Saturday, June 1, 1912; same should be plainly marked "Proposal for new jail" and addressed to T. J. Rawlings, Chairman of Jail Committee, or to T. J. Rawlings, County Judge. Each bid must be accompanied by a

certified check for \$1000 on some well-known bank, made payable to T. J. Rawlings, as evidence of good faith, and if their bid is accepted, as a guarantee that they will enter into contract at once and give an acceptable bond in the sum of \$20,000 for the faithful performance of the contract. Should they fail to enter into the contract, the check will be forfeited to Clay county as liquidated damages by reason of the delay.

The Fiscal Court will meet on the 3d day of June, 1912, and will accept whatever bid they think best on said plans and specifications, but reserves the right to reject any and all bids, and will only accept bids on the above-named plans and specifications.

T. J. RAWLINGS,
Chairman of Jail Committee for Clay County.

Erection of School House

Glennville, Ga.

Sealed proposals will be received by the Board of Education of the City of Glennville, Ga., until 11 A. M. May 22, 1912, for the building of an eight-room brick and frame school building in the city of Glennville. Each bid must be accompanied by a certified check for \$300 as a guarantee that successful bidder will furnish bond in 50 per cent. of the contract price. The right to reject any and all bids is reserved. Plans and specifications may be obtained from E. C. Hosford & Co., architects, Eastman, Ga., upon such terms as they may designate.

For further information apply to the undersigned.

C. L. COWART,
Sec. and Treas.

BRIDGES

Notice to Contractors

The opening of bids for five bridges to be built in Madison Parish, Louisiana, which was advertised for May 1, 1912, has been indefinitely postponed owing to unforeseen conditions.

A. L. SLACK,
Secretary Police Jury,
Tallulah, La.

To Steel Bridge Builders

Notice is hereby given that at the regular meeting of the Board of Supervisors, to be held in the Courthouse in Batesville, Miss., on the first Monday of April, A. D. 1912, bids will be received for building three steel bridges, the contract to be awarded to the lowest responsible bidder.

Plans and specification on file at the office of the Chancery Clerk in Batesville, Miss.

R. W. DRAPER, Clerk,
Batesville, Miss.

Tampa Bridge

NOTICE TO BRIDGE BUILDERS.

Contractors experienced in bridge construction are invited to tender sealed bids for the construction of a highway bridge to be built in the City of Tampa, Florida, carrying Lafayette street over the Hillsboro River, in accordance with the detail drawings and specifications on file in the office of the Board of Commissioners of Public Works of Tampa, Fla., and hereinafter referred to as the Board, and also in the office of the Consulting Engineers, Messrs. Bolter, Hodge & Baird, 149 Broadway, New York City.

Bids will be received by the Board at their office in the City of Tampa, Fla., not later than noon of Tuesday, May 7, 1912.

A certified check for \$5000, made payable to the Board, must accompany each bid. Such check will be returned to the unsuccessful bidder immediately after the bids are opened, and to the successful bidder unless he fails to execute the contract within ten days after such contract is awarded to him.

A bond satisfactory to the Board for the sum of twenty-five per cent. of the contract price will be required.

All bids must be made on form of proposal, which, with the contract, specifications and bond, can be obtained on application to the Clerk of the Board.

Bidders can secure a set of all drawings for this work by depositing ten dollars with the Clerk of the Board, which deposit will be returned on the return of the drawings.

The above work covers two reinforced concrete arch spans of 82 feet clear span, one deck Scherzer rolling lift draw, of two wings of 93 feet span, and concrete retaining walls for the approach to this structure.

The City of Tampa reserves the right to reject any and all bids.

CITY OF TAMPA.

By D. B. McKAY, Chairman Board of Commissioners of Public Work.
Attest: ALLEN THOMAS, Clerk.
BOLLER, HODGE & BAIRD,
Consulting Engineers.

MISCELLANEOUS

Fire Hydrants and Valves

Dayton, Tenn.

Sealed bids will be received by the Board of Water-Works Commissioners, at the office of John A. Denton, chairman, Dayton, Tenn., until 11 A. M. May 2nd, 1912, for the furnishing of 46 double-nozzle fire hydrants, 1 1/2" check valve, 1 1/2" check valve, 3 1/2" gate valves, 7 1/2" gate valves and 12 4" gate valves.

The bid must give price on cars at Dayton, Tenn. Specifications at office of chairman or engineer.

The right is reserved to reject any or all bids.

Jail and Jailor's Residence

Winchester, Ky.

Sealed bids will be received until noon May 9, 1912, for the erection of a jail and jailor's residence at Winchester, Kentucky. Plans and specifications can be had at the office of J. H. Evans, County Judge at Winchester, Clark county, Kentucky. The county reserves the right to reject any and all bids.

J. H. EVANS, County Judge.

Laying Water Mains

Dayton, Tenn.

Sealed bids will be received by the Board of Water-Works Commissioners, at the office of John A. Denton, chairman, Dayton, Tenn., until 11 A. M. May 2, 1912, for the laying of about five miles of 4", 6", 8" and 10" cast-iron water mains. Plan of distribution and specifications can be seen at the office of the chairman or engineer.

A certified check of fifty dollars must accompany each bid.

The Board reserves the right to reject any and all bids.

Cast Iron Pipe and Specials

Dayton, Tenn.

Sealed proposals will be received by the Board of Water-Works Commissioners, at the office of John A. Denton, chairman, Dayton, Tenn., until 11 A. M. May 2, 1912, for the furnishing of about five miles of 4", 6", 8" and 10" cast-iron pipe and about six tons of specials. Specifications can be seen at the office of the chairman at Dayton, Tennessee.

The Board reserves the right to reject any and all bids.

Notice for Materials—Electric Light Plant and Water-works Extension

WAGONER, OKLAHOMA.

Notice is hereby given that the City of Wagoner, Oklahoma, through its Board of Commissioners, will receive sealed bids up to 3 P. M. on the 14th day of May, 1912, for the following machinery and material:

One (1) 150 H. P. and one (1) 225 H. P. simple or tandem compound high-speed steam engines, with accessories, complete. Alternate bids will be received for two port slide or four port Corliss valve gear.

One (1) 100 K. V. A. and one (1) 150 K. V. A. 2200 volts 60-cycle 3-phase engine-type alternators.

Three (3) horizontal return tubular boilers, 72"x18", complete, with all appurtenances.

One (1) No. 12 gauge steel stack, 42"x90", with breeching for the boilers.

One (1) 5-panel switchboard for control of generators, feeders, street lighting and pump motors, complete.

Two (2) 25 H. P. 2300 volts 60-cycle 3-phase induction motors, to be geared single reduction to triple pumps, complete, with two (2) 3-pole S. T. non-automatic oil switches.

Two (2) 250 G. P. M. S. A. vertical triplex pumps for 300-ft. head, complete, with extension base.

Two (2) boiler feed pumps capable of 25 G. P. M. against 150 lbs. pressure at 40 ft. per min. piston speed.

One (1) feed water heater capable of heating 12,000 lbs. of water from 70 deg. Fahr. to 205 deg. Fahr. at atmospheric pressure.

Two (2) 50 K. V. 2200 to 6000 volts high tension transformers.

Twelve (12) low equivalent outdoor type 6000 volts lightning arresters.

Approx. 300 Class C white cedar poles, 30 ft. long, 6 in. top, complete, with crossarms, crossarm braces, porcelain insulators, insulator pins, etc.

Approx. 90,000 lin. ft. No. 8 wire, copper.

Approx. 1000 lin. ft. 8-in. Class "B" cast-iron water pipe.

Approx. 150 lin. ft. 10-in. Class "A" cast-iron pipe.

Five (5) Fink roof trusses, 40-ft. span, 8-ft. rise, complete, with purlins, etc.

Approx. 100,000 common vit. bldg. brick.

Approx. 750 cu. yd. brick for boilers.

Approx. 200 bbls. Portland cement.

Approx. 100 cu. yds. sand.

Approx. 150 cu. yds. broken stone or gravel.

All bids shall be made out on blanks provided for this purpose, and shall be addressed to the Board of Commissioners of the City of Wagoner, Oklahoma.

Each bid shall be accompanied by a certified check in the amount of ten (10) per cent. of the total bid as evidence of good faith and to guarantee signing of contract and to insure delivery of material in time specified in bid.

All bids shall remain on file in the office of the City Clerk for forty-eight (48) hours after having been received, as per Section 16 of the charter of the City of Wagoner.

Bidders must be prepared to give satisfactory guarantees of their machinery or materials if required by the Board of Commissioners.

Plans and specifications are on file in the office of the City Clerk of the City of Wagoner, Oklahoma, and in the office of the Benham Engineering Co., 812-14 American National Bank Building, Oklahoma City, Oklahoma.

The city reserves the right to reject any or all bids.

Dated this 25th day of April, 1912.

T. A. CHESTNEY,
City of Wagoner, Oklahoma.

THE BENHAM ENGINEERING CO.,
Consulting and Supervising Engineers,
812-14 American Natl. Bank Bldg.,
Oklahoma City, Oklahoma.

Pumping Equipment

The City of Paris (Texas) has finished one well, total depth 1175', first 1105' is 8", remainder is 6" from base of 8" pipe to bottom of well; water stands 30' below surface of ground, and has been tested with a second-hand compressor to about 250,000 gallons in 24 hours. A second well will be complete 100' distance from present one, presumably of same depth and dimensions.

Proposals, including prices, will be considered by the City Council at 7.30 o'clock April 9, 1912, for pumping the two wells above referred to. The present plant will furnish ample boiler and steam power. Nothing will be needed but pumping equipment for the two wells above mentioned.

ED H. MCCUISTION,
Mayor.

Motor Apparatus and Supplies

SHREVEPORT, LA.

Sealed bids will be received by the City of Shreveport, La., up to 10 A. M. on May 14, 1912, for the following:

One auto combination chemical hose wagon engine, not less than 4-cylinder and 50 H. P. A. L. A. M. with two ignition systems, including Bosch magneto and battery, two sets of spark plugs, anti-kicking device, etc.; tires, solid rubber; hose body, length not less than 9 ft., capacity 1200 ft. 2 1/2-in. hose; chemical tank, 60 gal., with 200 ft. 3/4-in. hose; usual fire and auto equipment, including speedometer.

Two auto combination pump engine hose wagons; equipment, engines and tires as specified for No. 1; capacity of pump, not less than 600 gals. per minute; hose body, length not less than 8 ft., capacity not less than 1000 ft. 2 1/2-in. hose.

One tractor to pull 75-ft. Seagrave aerial truck; engines, tires and equipment as specified in No. 1.

One chief's car; engine and equipment as specified in No. 1, except that engine may be 30 H. P., A. L. A. M.; pneumatic tires; extra heavy chassis, two electric headlights and speedometer.

2000 ft. 2 1/2-in. rubber-lined double-jacket standard fire hose, with standard screw couplings attached, and guaranteed pressure up to 350 lbs.

Nine latest improved non-interfering fire-alarm boxes; one auxiliary non-interfering fire-alarm box; one electric bell striker for 1400-lb. bell; one 15-in. latest improved gong and indicator.

A certified check for 10 per cent. of amount of bid must accompany each bid.

The Council reserves the right to reject any and all bids.

L. H. BAKER,
Secretary-Treasurer,
City Hall, Shreveport, La.

Sealed Proposals for the Erection and Completion of Bank and Office Building for the First National Bank, Dublin, Ga.

TO BE ERRECTED AT THE CORNER OF MARKET AND JEFFERSON STS., IN THE CITY OF DUBLIN, GA.

1. Sealed proposals addressed to Wm. R. Brigham, Chairman of the Building Committee, Dublin, Ga., will be received until twelve o'clock noon June 1, 1912, for the furnishing of all material and labor required for the erection and completion of a fireproof bank and office building six stories high, with a basement, covering an area of approximately 31x90 feet; all as more minutely described in the plans and specifications on file and open for inspection at the First National Bank, Dublin, Ga., and at the office of the Architect, A. Ten Eyck Brown, 607-10 Forsyth Building, Atlanta, Ga. All bids to be endorsed "Proposals for erection and completion of bank and office building for First National Bank, Dublin, Ga."

2. Copies of drawings and specifications may be obtained from the above architect upon a deposit of a certified check made payable to the said architect in the sum of \$20 for each set. Said check to be returned to the maker upon the return of the drawings and specifications in good condition and the filing with the owners of a bona-fide bid; otherwise said check becomes forfeited.

3. All bids must be submitted on special proposal blanks furnished by the Architect or they will not be considered, and accompanied by a certified check of two per cent. of the total amount of bid, payable to the First National Bank, Dublin, Ga., as a guarantee that the successful bidder will enter into a contract according to said plans and specifications and execute a bond in the amount of fifty per cent. of the contract within ten days after the notification of the acceptance of his bid, failing which said check shall become forfeited to the owners as liquidated damages.

On the signing of the contract and approval of the bond, certified checks of the successful bidders will be returned to their respective makers.

Each proposal shall be signed with the full name of the bidder, and if a company or corporation, the full name of each partner or officer.

The Building Committee reserves the right to reject any or all proposals.

(Signed) WM. R. BRIGHAM,
Chairman Building Committee.

F. G. CORKER,
President.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS.

MISCELLANEOUS.

MISCELLANEOUS

Pumping Station, Filter Plant and Enlarging Water Supply

NOTICE TO CONTRACTORS.

Reidsville, N. C., April 25, 1912.

Sealed proposals will be received by the Mayor and Board of Commissioners of Reidsville, North Carolina, until 8 o'clock P. M. on the 21st day of May, 1912, and then publicly opened and read, for laying about 5 1/2 miles of wood pipe, and for the construction and equipment, complete, of a pumping station containing two turbine pumps, capacity 400 gallons per minute against 212 feet head, direct connected to 3-phase 60-cycle 2200-volt motors; and for the construction and equipment of a mechanical filter plant, capacity 500,000 gallons per 24 hours.

Plans and specifications will be on file at the Town Hall, Reidsville, N. C., and copies may be obtained at the office of E. W. Myers, Engineer, Greensboro, N. C., by depositing \$3 to cover cost of prints.

The right is reserved to reject any and all bids and to accept any bid, as the best interests of the town may require.

FRANCIS WOMACK, Mayor.
L. H. HARDY, JR., Clerk.

Construction of Concrete Locks and Dams

NOTICE TO CONTRACTORS.

State Capitol, Tallahassee, Fla.,

April 22, 1912.

Sealed proposals will be received by the Board of Drainage Commissioners of the State of Florida until 10 o'clock A. M. Wednesday, May 22, 1912, at which time they will be opened and publicly read, for the construction of three concrete locks and wing dams in the drainage canals near the south shore of Lake Okechobee.

A map showing location and a complete set of drawings and specifications can be obtained from the Chief Drainage Engineer's office in Tallahassee, Florida, on the payment of two (\$2) dollars.

No bid will be considered unless accompanied by a certified check for two thousand (\$2000) dollars, as provided in the specifications. The successful bidder will be required to enter into a proper contract with the Board and furnish a bond, executed by some approved surety company, in the penal sum of ten thousand (\$10,000) dollars, for the faithful performance of the contract.

The Board reserves the right to reject any or all bids.

J. O. WRIGHT,
Chief Drainage Engineer.
J. C. LUNING,
Sec'y Board of Drainage Commissioners.

Fire Alarm Boxes

The City of Florence, S. C., will receive bids until 12 o'clock noon Wednesday, May 22, 1912, for furnishing and installing ten non-interfering fire-alarm boxes. The city now has a fire-alarm system, and these are to be additional boxes. The city reserves the right to reject any or all bids.

W. H. BERRY,
Chairman Fire Committee.

Notice to Contractors

Sealed proposals for the structural work of Annex to Pulaski County Courthouse will be received at the office of Geo. R. Mann, Architect, 335 Gazette Building, Little Rock, Arkansas, until 12 M. May 15th.

Contractors desiring to estimate upon this work may receive drawings at the above address by depositing certified checks for fifty dollars, made payable to Geo. R. Mann. This check will be returned when plans are returned to architect's office.

GORDON N. PEAY,
Building Commissioner.

New Elks' National Home, Bedford City, Virginia

Sealed proposals will be received by the New Elks' National Home Commission at their headquarters at the Sinton Hotel, Cincinnati, Ohio, until 12 o'clock M. of Thursday, May 23, 1912, for the erection of buildings for the New National Home of the B. P. O. E., at Bedford City, Va.

Lump and separate bids will be taken for the construction of a series of buildings, consisting of Administration Building, Seven Dormitories, Hospital and Power-house, and shall cover the masonry, terra-cotta, reinforced concrete construction, cement work, plastering, painting and decorating, plumbing and sewerage, sheet-metal and tile, composition roof, glass, mosaic and tile, finished hardware, electric wiring and heating. Separate bids will also be taken on the boilers, engines and generators required for this plant.

Plans and specifications can be obtained at the office of the architects, Ottenheimer, Stern & Reichert, No. 105 West Monroe street, Chicago, Ill.

Each proposal must be accompanied by a certified check upon an incorporated bank or trust company, payable to the order of August Herrmann, Chairman, for five (5) per cent. of the amount of bid. Bids will be opened by the Chairman of the Commission in the presence of contractors or their representatives.

All proposals to be addressed to
AUGUST HERRMANN, Chairman,
New Elks' National Home Commission,
Sinton Hotel, Cincinnati, Ohio.

Receiver's Sale NOTICE SEALED BIDS

Pursuant to an order made and entered by the Insolvency Court of Hamilton County, Ohio, in case No. 4635, the undersigned, as Receiver of THE I. & E. GREENWALD CO. of Cincinnati, O., manufacturers and builders of the celebrated Greenwald Standard Steam Engine and General Transmission Machinery, Coal Washing and Powder Mill Machinery, and Gearing of every description, will receive sealed bids for the sale of the real estate, and the entire plant, equipment, patterns and assets of said Company, except book accounts and bill receivable, in the following forms, to wit:

1. ENTIRE PLANT.—Sealed bids for the entire machinery, steam engine, general transmission and gearing business of The I. & E. Greenwald Co., as a running concern, consisting of the real estate, good will, power plant, equipment, patterns, all material and unfinished contracts on hand on day of sale, and all other personal and chattel property, except book accounts and bills receivable; or.

2. REAL ESTATE.—Sealed bids for the real estate owned by The I. & E. Greenwald Co., in fee simple, free from liens and incumbrances, together with engine, boiler, feed-water heater, pumps, and machinery located in engine and boiler room as now operated by said company, as per inventory; or.

3. BUSINESS.—Sealed bids for the entire machine, steam engine, general transmission and gearing business carried on by The I. & E. Greenwald Co., consisting of the good will, patterns and equipment, as per inventory, and all material and unfinished contracts on hand on day of sale, excepting, however, the engine, boiler, feed-water heater, pumps, and machinery located in engine and boiler room as now operated by said company, and also excepting the book accounts and bills receivable.

A sale of the real estate separate and apart from the business and chattel property, however, is subject to the right of said company or of any purchaser of said chattel property to remain upon said real estate for a reasonable time for the purpose of removing and hauling away said chattel property.

A full and complete inventory of all of the assets of said company is now on file in the office of the Clerk of the Courts of Hamilton County, Ohio, and at the office of the company, 720 East Pearl street, Cincinnati, Ohio.

All bids must be enclosed in an envelope properly sealed and marked "Sealed Bids," addressed to John H. Gibson, Receiver of The I. & E. Greenwald Co., 720 East Pearl street, Cincinnati, Ohio, and must be filed with said Receiver on or before Saturday, June 1, 1912, at 12 o'clock noon. All bids are subject to the approval of and confirmation by said Insolvency Court of Hamilton County, Ohio.

JOHN H. GIBSON, Receiver.
DEMPEY & NIEBERDING, Counsel,
Cincinnati, Ohio.

TAKE NOTICE!

We buy and pay highest market prices for all grades

SCRAP METAL

such as scrap brass, copper, zinc, babbit metals, lead, skimmings, drosses, ashes. Advise what you have to dispose of and we will be glad to name our best prices.

H. KANDER & CO. BOWLING GREEN, OHIO

These Advertisements Too Late for Regular Alphabetical Index

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National Lead Co. has six of our trucks in service: First order, April 9, 1909; last order, October 18, 1911. Repeat orders signify approval.

Mack

Proved by 12 years
of real service

Saurer

Proved by 17 years
of real service

Hewitt

Proved by 10 years
of real service

"Leading gasoline trucks of the world."

Profitable trucks are:

1. Of proved long life (which means slow wear).
2. Exactly suited to each use in size and style.

Our trucks:

No other such records of profitable use as Macks, 12 years; Saurers, 17 years; Hewitts, 10 years.

Full range of sizes and styles: 1, 1 1/2, 2, 3, 4, 4 1/2, 5, 6 1/2, 7 1/2 and 10 tons, with all standard types of bodies (and special bodies if required) built in our own plant.

You cannot afford to think about your transportation needs without consulting our Engineering Department. Send for authoritative data on use of trucks for almost every line of manufacturing.

International Motor Company

General Offices
57th and Broadway New York
Works
Allentown Pa; Plainfield N J
Sales and Service Stations: New York, Chicago, Philadelphia, Boston, Cleveland, Cincinnati, Buffalo, Jersey City, Baltimore, Atlanta, St. Louis, Kansas City, Denver, Los Angeles, San Francisco and other large cities.

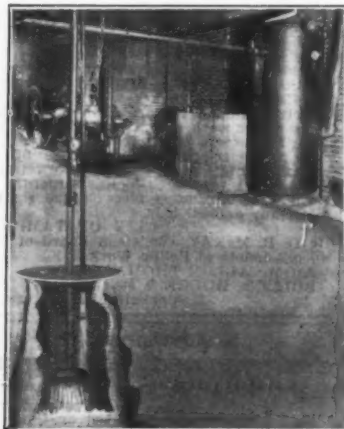
This space reserved for

The Enterprise Steam & Hot Water Heating Co.

GEORGE R. BULLEN, Proprietor

BALTIMORE, MD.

Watch for further announcements.



A Model 20th Century Air Lift Plant.
Not a Working or Wearing
Part in the Well.

HARRIS AIR PUMP COMPANY, INDIANAPOLIS, IND.

PUMPS

TO MEET ALL CONDITIONS

For wells, THE 20TH CENTURY AIR LIFT

For Rivers, Lakes, Ponds and Shallow wells, THE PNEUMATIC PUMP.

What Some Users Say:

"Entire satisfaction—much better than guarantee."

THOMAS W. MILLETT,

Supt. Waterworks, Cape May, N. J.

[Pumping 1000 gals. from 8' well].

"Have fulfilled their guarantee."

R. R. NELLINS,

Waterworks, Dallas, Tex.

[17 pumps installed here].

"Entire satisfaction. May equip additional wells this spring."

VACUUM OIL CO.

Olean, N. Y.

[4 more just installed. All wells now equipped].

"Our pumps are giving very excellent satisfaction."

HELVETIA MILK CONDENSING CO.,

Hudson, Mich.

"I have used 20th Century Air Lift for last six months and find same to be very satisfactory."

JOHN HOENADEL,

Brewer of Hohenadel Brau, Philadelphia, Pa.

Others Say the Same.

Write for Bulletin 14.

Special Advertisements of General Interest.

WE SELL SUBDIVISIONS WE START NEW TOWNS WE LOCATE FACTORIES

Let us cut your land into LOTS and turn it into DOLLARS

WE WILL BUY YOUR LAND —OR— WE WILL SELL YOUR LAND

OUR SPECIALTIES—Selling subdivisions in cities or growing towns; organizing and selling new town sites; locating factories.

Since the panic of 1907, besides selling numerous subdivisions, we have *organized, started and sold three new town sites*, where factories have since located.

DO YOU OWN LAND SUITABLE FOR SUBDIVISION near a growing town or city? *We will buy it outright or we will sell it for you on a commission basis. WITH OUR SYSTEM* we can sell your land in ONE DAY and get more money for you than you could possibly get in one year.

OUR ORGANIZATION consists of 27 thoroughly schooled real estate salesmen. Satisfactory references furnished.

AMERICAN LAND COMPANY,

CHARLESTON, W. VA.

OFFICES—22-23 and 24 Quarrier and Virginia Streets.

J. T. KIMBROUGH WE LOCATE MANUFACTURERS REAL ESTATE

409-10 Atlanta National Bank Bldg.

ATLANTA, GA.

BRICK WORKS FOR SALE

Brick Works, formerly owned by the Parkersburg Brick Company.
Capacity, 25,000 bricks per day.
Ten round brick kilns. Type, down draft.
Capacity, 570,000. Can be enlarged to suit needs of purchaser.

Modern machinery equipment, made by E. M. Freese & Company.

Heavy local demand for brick.
Natural gas available at eight cents per thousand cubic feet.

Very large supply of finest clay, also finest shale suitable for roof tile and paving brick—same quality shale used by United States Roofing Tile Company. The latter property joining the property here offered.

Works located near main line Baltimore & Ohio Railway, and about one mile from Ohio River.

A splendid opportunity for large company to engage in manufacture of paving or building brick or roofing tile.

Property will be sold on liberal terms, and is exceptional opportunity for right party.
Address or call on

JAMES A. WADE, Agent,
Parkersburg, W. Va.

Receiver's Sale

I will sell, by order of the Court, on the 14th day of May, the property of the

Beaumont Cotton Oil and Refining Company

consisting of a new and up-to-date Cottonseed Oil Mill, crushing capacity of 120 tons of seed per day, including 9 acres of ground, situated in the suburbs of the City of Beaumont, Texas.

JOE E. CARROLL, Receiver
BEAUMONT, TEXAS

Complete Saw Mill Plant, Dry Kiln and Logging Equipment

FOR SALE

Mill has a daily capacity of 25,000 feet. Logging outfit consists of Locomotive, three and one-half miles of tramroad and six log trucks. Eighteen to twenty million feet of choice Pine timber, well blocked. Mill located about 35 miles south of Savannah, on the Seaboard Air Line Railway. Fifteen to twenty million feet additional timber can be had in easy reach of this plant. For full particulars address

ALBERT FENDIG & CO., Brunswick, Ga.

BANKRUPT SALE Hardwood Lumber Co.

Will be sold, under order of Referee in Bankruptcy, at Hamburg, Aiken County, South Carolina, at 12 o'clock (noon) Saturday, May 4, 1912, at the plant of Hardwood Lumber Company, the plant and property of Hardwood Lumber Company, consisting of eight lots in Hamburg, Aiken County, South Carolina, and Hardwood Lumber Company mill buildings, machinery, one logging locomotive; lot of steel rails; one tract of timber land containing 1000 acres; timber on another tract of 1750 acres, both in Aiken County, South Carolina. Terms cash upon confirmation by Referee. Successful bids to be accompanied by 10 per cent. in cash or certified checks.

This April 19, 1912.

J. L. HANKINSON,
Trustee in Bankruptcy.

ASSETS REALIZATION COMPANY

Capital \$10,000,000

Will loan on security requiring special investigation or close supervision, and not available for bank loans.

Large enterprises financed. Prompt investigation of security offered, whatever its character or location.

Correspondence Invited

NEW YORK PHILADELPHIA
25 Broad St. Lafayette Bldg.
CHICAGO
First National Bank Building

BRICK PLANT IN CENTRAL FLORIDA FOR SALE

Now operating to full capacity. Inexhaustible clay deposit. Good-paying investment, but present owner has good reasons for wishing to sell. Address

"BRICK PLANT,"
Care Manufacturers Record.

Manufacturers Record, the Medium for Machinery Advertisements.

A Genuine Opportunity

THE large, modern Foundry and Machine plant at Portsmouth, Ohio, will be sold May 15th, 1912. The plant has electric crane and electric and pneumatic equipment throughout; 52-inch and 24-inch Whiting cupolas, machine, pattern and forge shops, commodious buildings, splendid shipping facilities, upon the Norfolk & Western, Chesapeake & Ohio, Baltimore & Ohio Southwestern Railroads and Ohio River.

The property, running, should be worth \$100,000; will probably sell for one-third of this amount, owing to lack of a specialty to manufacture. Terms: One-third cash, one-third in six months and one-third in twelve months.

Portsmouth is a manufacturing town, has 27,000 population, thirty miles of paved streets, splendid churches and schoolhouses; an ideal location for output delivery in West Virginia, Kentucky, Ohio, Indiana, Illinois and Michigan.

Address

ED. J. DAehler

Portsmouth,

Ohio

SAW MILLS With TIMBER FOR SALE

An up-to-date, going plant; two mills; daily capacity, 200,000 feet; planing mills, box factory, lath machinery, still machine, log railroads; everything modern, fully equipped and in successful operation. Western white pine timber owned and controlled sufficient to run 40 years. Has always been profitable, and future seems equally promising. Location in Southwest; especially healthful and advantageous. A bargain; sale necessary to close estate. Terms reasonable. Purchaser should have \$400,000 cash and securities or more. Buy of owners at bed-rock prices.

E. S. GOSNEY, Administrator
PASADENA, CAL.

Cotton Mill FOR SALE

Three-story Cotton Mill, 40x100 and wings, about 25,000 square feet of floor space, size of lot 100x200. Also all of the spinning machinery.

Kilton Lappers and Finishers, Automatic Waste Cleaners; Atherton, Saco and Pettee Cards; Card Grinders, Collers, Woonsocket Spinners and Speeders, Fales and Jenks Spinning and Twisting Frames, Draper Upright Spoolers and Denny Warpers. Shuffling and Belting and Hymidifying System. Must be sold.

SCHADEWALD MILLS,
3d and Huntingdon Sts., Philadelphia, Pa.

COTTON YARN MILL FOR SALE

7070 spindles, well balanced, complete equipment, modern machinery. Stone buildings, operatives' houses. Address

"YARNS,"

Care Manufacturers Record.

WAGON PLANT EQUIPMENT

We recently purchased the wagon plant of the Hickman-Ebbert Company and are prepared to sell the following at very reasonable prices: 52 Channel Iron Rail-Bearing Lumber Yard Cars. 12 Transfer Cars. 6 Turntables with rolling frogs. 1 Improved Fellow Sawing Machine with saws. 1 Patent Wheel Tenoning and Cut-off Machine. 1 Patent Automatic Double Vertical Chisel Hub Mortising Machine. 1 Spoke Tenoning Machine. 1 lot Band Saws, various sizes. 1 lot Shaper Knives, various sizes. 1 Set 24" Steel Dies. 12 Side Paint Trucks. 1 Hot Blast Heating Apparatus, complete for drykline; cost \$2250. Each article mentioned is of the best manufacture, has been only slightly used, and is in first-class condition. Address offers and inquiries to

THE UNIVERSAL STENOTYPE COMPANY
Owensboro, Ky.

Bargains in Machinery and Supplies.

FOR SALE

Direct Connected Engines and Generators

Two 650 K. W. each General Electric M. P. 575-volt direct-current Generators direct connected to 32x60 Wheelock heavy-duty engines. Speed 80 R. P. M. In excellent condition. Can be seen on foundation. Ready for immediate delivery.

PFANNMUELLER ENGINEERING CO.
3701-3-5-7 S. Ashland Ave., Chicago

Rebuilt Engines and Boilers

Engines—Corliss.—18x42 Lane & Bodley, 18x36 Ohio Heavy Duty, 16x42 Allis, 12x30 Lane & Bodley.

Engines—Automatic.—14x24 Buckeye, 11x12 Buffalo Compound, 13x15 Taylor, 13x16 Atlas, 13x12 Harrisburg-Idol, 13x12 Phoenix, 12x14 Green, 12x12 Armstrong & Sims, 11x16 Atlas, 10x12 Valley, 8x14 Noyes.

Engines—Throttling.—18x24 Atlas, 14x18 Sinker-Davis, 14x11 Lewis Vertical, 12x16 Reed, 12x14 Brownell, 10x16 Bass, 10x12 Atlas, 9x14 Lane & Bodley, 8x10 Erie, 6x8 Industrial.

Boilers—Stationary.—72x18, 60x16 High-Pressure, 72x18 Standard, 72x16, 60x18, 60x16, 60x14, 54x14, 48x14, 44x14, 42x12, 36x16, etc.

Boilers—Fire Box.—100, 80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 H. P., etc.

Boilers—Vertical.—50, 40, 35, 30, 25, 20, 16, 12, 10, 8 and 3 H. P., etc.

Heaters.—All sizes, Open and Closed.

Pumps.—All sizes, Single and Duplex.

Electrical.—30 K. W. Generator, direct connected to 8x10 Skinner Engine; 20 K. W. generator, direct connected to 8x10 Economic Engine; 18 K. W. Belted Generator.

Miscellaneous.—Sawmills, Lath Mills, Edgers, Cut-off Saws, Re-Saws, Blowers, Exhaust Fans, Tanks, etc. Write for list. Also full assortment of new machinery.

Sole manufacturers of the celebrated "Leader" Injectors and Jet Pumps. Send for circular.

THE RANDLE MACHINERY CO.
1734 Powers Street, CINCINNATI, OHIO

AT YOUR PRICE BEFORE REMOVAL

20x42 R. H. Harris Corliss, 14" wheel.
18x42 R. H. Allis Corliss, 16" wheel.
18x42 L. H. Allis Corliss, 16" wheel.
18x24 L. H. Allfree Automatic.
20x24 L. H. Green Automatic.
First Class. Immediate shipment.

PITTSBURGH MACHINERY & EQUIPMENT CO.
Fulton Building, Pittsburgh, Pa.

FOR SALE CHEAP

Four 100 H. P. Portable Return Flue Boilers, 12"x16" Erie City Engine, 12"x16" Birmingham Engine, 18"x22" H. S. & G. Engine, R. Hand Knife Grinder, 10" Outside Molder.

Tampa Machinery Exchange, Tampa, Fla.

ENGINES, BOILERS and OTHER MACHINERY Fully Guaranteed

1 9x12 Ideal Automatic Engine.
1 10x16 Skinner Automatic Engine.
1 14x36 Weisel & Vilter Corliss Engine.
1 14x42 Fraser & Chalmers Corliss Engines.
1 22x42 Hamilton Corliss Engine.
1 16x16 Ball Automatic Engine.
1 15x16 New York Safety Automatic Engine.
1 35 H. P. Economic Fire Box Boiler, 95 lbs. pressure.

1 90x16 Internally Fired Triple Riveted Marine Boiler, 175 H. P., 95 lbs. pressure.
1 42x12 Horizontal Double Riveted Boiler, 95 lbs. pressure.
1 54x16 Horizontal Double Riveted Boiler, 95 lbs. pressure.
2 60x16 Horizontal Triple Riveted Boilers, 110 lbs. pressure.
4 72x20 Horizontal Triple Riveted Boilers, 100 lbs. pressure.
2 78x20 Horizontal Triple Riveted Boilers, 110 lbs. pressure.

1 16x10x10 Worthington Duplex Pump.
1 14x8x12 Fairbanks-Morse Duplex Pump.
1 12x8x10 Worthington Duplex Pump.
1 7x5x10 Worthington Duplex Pump.
1 600-gallon Oil Storage Tank.
12 8000-gallon Oil Storage Tanks.

2 8x10 Double Cylinder Crane Elevator Hoists.
1 3-ton Otis Electric Elevator, all complete.
1 10-ton Standard Gauge Industrial Locomotive Crane with 38-foot boom.

1 Class "J" Duplex Ingersoll-Rand Belt Driven Air Compressor; size of cylinders, 16"x16 and 25"x16; capacity, 1000 cu. ft. of free air per minute.
1 Class "J" Duplex Ingersoll-Rand Belt Driven Air Compressor; cylinders, 14"x14 and 22"x14; capacity, 1350 cu. ft. of free air per minute.

1 200 H. P. 3-phase 60-cycle General Electric Alternating Current Motor; speed, 600 revolutions; complete, with switchboard. Write for our Machinery Bulletin No. 239, quoting special prices on everything we have to offer in first-class second-hand Machinery, fully guaranteed.

CHICAGO HOUSE WRECKING CO.
W. 35th and Iron Sts., Chicago, Ill.

PLANT FOR SALE

At Cambridge City, Ind., on the Pan Handle Railroad
2 70-ton Bucyrus Steam Shovels.
6 H. K. Porter Locomotives, 9x14, 3-ft. gauge.
1 H. K. Porter Locomotive, 10x16, 3-ft. gauge.
1 Baldwin Locomotive, 9x14, 3 ft. gauge.
21 3-yd. Ryan & McDonald one-way Dump Cars, 3-ft. gauge.

54 4-yd. Ryan & McDonald one-way Dump Cars, 3-ft. gauge.
11 Frogs and Switches, 60-lb. Rail.
1 1/2-yd. McKelvey Concrete Mixer.
3 1/2-yd. McKelvey Concrete Mixers.

2 Guy Derricks, 74-ft. mast, 65-ft. boom, with bull wheels, guy wires, etc.
1 Small Stiff-Leg Derrick.
1 Large Stiff-Leg Derrick with bull wheel.

6 Guy Derricks, 50-ft. mast, 55-ft. boom, with bull wheels, guy wires, etc.
1 Guy Derrick, 50-ft. mast, 55-ft. boom, with bull wheels, guy wires, etc.

1 3-drum Lambert Hoisting Engine, 7x10 (double engines).
3 Double Drum Mundy Hoisting Engines, 6x10 (double engines).
3 Double Drum Mundy Hoisting Engines, 6x12 (double engines).
(With boilers and hoisting cables.)

1 Double Drum Lambert Skeleton Engine, 6x10.
5 Dake Swinging Engines.
4 Mundy Swinging Engines.

1 40 H. P. Portable Locomotive Boiler.
6 Vertical Boilers, 3 Edison Pumps.
3 Small Horizontal Steam Pumps.
3 No. 6 Morris Centrifugal Pumps.

1 No. 6 Morris Centrifugal Pump.
6 Ideal Concrete Buckets.
3 Eclipse Concrete Buckets.
16 Side Dumping Buckets.

1 Double Line Owen Clamshell Bucket, 1 cu. yd. capacity.

P. F. BRENDLINGER, Contractor
1009 Arcade Building PHILADELPHIA

HOWARD W. READ COMPANY

3d and Arch Sts.
PHILADELPHIA, PA.

Boilers, Engines, Pumps

Hoisting Engines

Every Size and Every Duty

Immediate Shipment
Catalogue on Request

100 K. W. 250 Volt Westinghouse Belted Generator

Six-pole, compound wound, direct current, type M, speed 550 R. P. M., with base pulley and field rheostat. Condition like new. Guaranteed. Price \$750.00 cash. Send for list of other Bargains.

MILLER-OWEN ELECTRIC CO.,
217-219 First Ave., Pittsburgh, Pa.

15 H.P. 3-Phase 60-Cycle 220 Volt Westinghouse Motor

Slip-ring, type F, speed 900-450. Has rails, pulley starter and controller for varying speed. Slightly used. Guaranteed. Price \$200.00 cash. Send for list of other Bargains.

MILLER-OWEN ELECTRIC CO.,
217-219 First Ave., Pittsburgh, Pa.

DYNAMOS and MOTORS

SPECIAL BARGAINS

Practically new, 200 K.W., 125 volt, 6-pole, Burke Dynamo, 480 R.P.M., \$825.00.

150 H.P., 250 volt, type "M.P.", 6-pole, C. & C., Shunt Wound Motor, 350 R.P.M., \$675.00.

100 K.W., 6-pole, 250 volt Crocker-Wheeler Dynamo, 650 R.P.M., \$640.00.

100 H.P., 2-phase, 60-cycle, Westinghouse, type "C," Induction Motor, 1120 R.P.M., \$450.00.

300 Dynamos and Motors in all sizes, thoroughly overhauled and guaranteed.

We buy, sell and rent.

E. LEVENE & CO.

124 N. Third St Philadelphia

CORLISS ENGINES

1 18x36 Bates.
1 16x42 Allis.
1 16x42 Brown.
1 18x42 Lane & Bodley.
1 20x48 Wetherill.
1 22x48 Hamilton.
1 24x42 Atlas.
1 22x48 Allis.
1 28x54 Hamilton.
Automatic Engines of all sizes.
1 40-ton Corliss Engine Type De La Vergne Ice Machine.
1 60-ton Corliss Engine Type De La Vergne Ice Machine.
1 lot Brewery Tanks.
Woodworking Machinery of all kinds.
Belting, Shafting, Pulleys and Hangers.

CLEVELAND BELTING & MACH. CO.,
Cleveland, Ohio.

Electric Machinery FOR SALE

One 120-kilowatt A. C. 440-volt Westinghouse Generator, belted to 16x42 Allis-Corliss Engine, complete with exciter, switchboard and all fittings.

One 20-kilowatt D. C. 230-volt C. & C. Electric Co. Generator, direct connected to 8x10 Allfree Engine.

M. R., Box 2, Station A, Cincinnati, Ohio

Bargains in Rebuilt, Boilers, Engines, Locomotives, Etc.

1 25 H. P. Refitted Fire Box Boiler, price \$200.
1 each 40, 60 and 80 H. P. Refitted Fire Box Boilers, with fittings, at a bargain.

1 each 60, 80 and 100 H. P. Horizontal Tubular Boilers.
1 each 6, 8 and 10 H. P. Vertical Boilers, complete.

2 16 H. P. Hoisting Engines, double drums, with boilers.
1 25 H. P. Hoisting Engine, single drum.

1 50 H. P. Gas Engine (used four months).
1 10" dia. Mine Ventilating Fan, with engine.

1 10-ton "Baldwin" Saddle Tank Locomotive, 44" gauge.
1 30-ton "Climax" Geared Logging Locomotive, 3' gauge.

1 each 6, 8 and 10" Electric Mine Ventilating Fans (Thayer Pat.).
The above must be sold without reference to cost. Write us.

SOUTH SIDE FOUNDRY & MACH. WKS.,
Charleston, West Virginia.

AIR COMPRESSOR FOR SALE

One 9x10x12 Sullivan Steam-Driven Compressor, capacity 174 cubic feet, at a bargain.

BYRD BROTHERS,
Salisbury, N. C.

MACHINE TOOLS

FOR SALE

1 No. 36 48" Niles Car Wheel Borer, having 6" diameter spindle, 18" traverse, 4 speeds, driven by bevel gearing, back geared, 4-step cone pulley.

1 Bement-Niles Double-End Axle Lathe, center driven, triple geared, complete with driving dogs.

1 No. 2-A Owens Plain Milling Machine, vertical, transverse and longitudinal feeds, 10" Universal dividing head.

All of the above machinery in good working condition. Full particulars by writing THE MILLER-SANDY MACHINERY CO., Kansas City, Mo.

ENGINE FOR SALE.

A FINE, LARGE ENGINE,
ABOUT 150 HORSE POWER,

suitable for running factory or mill. It is in good order. Has been used but little. Having no use for this engine, we will sell it at much less than cost.

MOBILE COAL CO.,
160 St. Francis Street, MOBILE, ALA.

HORIZONTAL BOILER FOR SALE

One Horizontal Boiler, 16' long, 48" diameter, 50 3" tubes, in good working order, capable of carrying 80 pounds working pressure. Prices on application.

COLDWELL-WILCOX COMPANY,
Newburgh, N. Y.

Heater and Purifier

FOR SALE

One second-hand "BERRYMAN" HEATER AND PURIFIER in perfect condition and guaranteed good as new. Will sell cheap for cash. ADDRESS

M. F., care Manufacturers Record
BALTIMORE, MD.

WE BUY

AND

DISMANTLE

Factories

Mills

Machine Shops

and all kinds of

Industrial Plants

We are always in the market to buy

Scrap Iron and Steel

OF EVERY KIND

FRANK SAMUEL

Harrison Building

15th and Market Streets

PHILADELPHIA, PA.

FOR SALE—24 H. P. STATIONARY

Engine and boiler with all connections; A1 condition.

STALEY BENT WORKS, - - - Tiffin, Ohio.

FOR SALE OR RENT

1 30-ton Little Giant Special High Crane Traction Steam Shovel. 1 25-ton Little Giant Traction Steam Shovel. 1 No. 6 Thew Traction Steam Shovel. 1 No. 1 Thew Traction Steam Shovel. 2 16x16" Porter 36" S. T. Locomotives. 2 10x16" Baldwin 36" S. T. Locomotives. 1 13x22" Baldwin 6-driver S. G. S. T. Locomotive. 2 10-ton 3-wheel New York Steam Rollers. 1 3-ton Tandem Universal Puddle Roller. 1 2 1/2-ton Tandem Iroquois Asphalt Roller. 7 Steel Guy Derricks, 70' masts. 2 2-yd. Hayward Orangecell Buckets. 1 2-yd. Hayward Clamshell Bucket. 1 1 1/2-yd. Hayward Clamshell Bucket. 5 Lambert D. Boom Swing Electric Hoists, 40 and 60 H. P., D. C., 220 volts. 40 Hoisting Engines, Liddergood, Mundy and Lambert, skeleton, mounted, with and without boom swings, from 6 to 100 H. P. Air Compressors, Pumps, Boilers, Engines, Rock Crushers, etc. Get our price on new derricks before purchasing.

HENRY A. HITNER'S SONS CO.,
Philadelphia, Pa.

FOR SALE

One 28"x14" Lathe. One 30"x10" Lathe. Two 14"x6" Lathes. One 30 H. P. Traction Engine. One No. 2 B. Koehring Cement Mixer. One No. 1 B. Koehring Cement Mixer. One No. 1 Smith Mixer with Boiler and Engine. Two 15 H. P. Hor. Tub. Boilers. Two 110 H. P. Hor. Tub. Boilers. Three Berlis Planers and Matchers, 4"x3".

CHAS. T. LEHMAN, - Birmingham, Ala.

Before Buying that Rock Crusher

Let us give you our prices. We can save you money. You have the selection from a more than ordinarily complete line. 1 30"x14" "Buchanan" Crushing Roll (New); 1 24"x14" "Buchanan" Crushing Roll (Manganese steel shells); 1 25"x18" "Moser" Crushing Roll; 1 No. 5 "Gates" Gyrotory Crusher, style B; 1 No. 4 "Gates" Gyrotory Crusher, style K (New); 1 No. 4 "McCully" Gyrotory Crusher; 1 12"x28" "Climax" Jaw Crusher, weight 27,000 lbs.; 1 12"x24" "Hoagland" Jaw Crusher; 1 9"x15" "Blake" Jaw Crusher; 1 7"x12" "Champion" Jaw Crusher No. 3; 2 No. 4 "Champion" Portable Road Crushers, complete, with engine, boiler and elevator. We also have in stock boilers, engines, hoisting engines, pumps and concrete mixers. Send for complete price-list.

L. F. SEYFERT'S SONS, INC.,
437-39 North Third St., Philadelphia, Pa.

IN STOCK

**Rebuilt and Guaranteed
for Immediate Delivery**

SPECIAL

1 1000-gallon Blake Underwriters' Fire Pump.
1 500-gallon Knowles Underwriters' Fire Pump.
1 1000 H. P. Webster Open Heater.

BOILERS

2 72"x20" Horizontal Return Tubular, 175 H. P. each, 125 lbs. steam.
2 66"x18" Horizontal Return Tubular, 125 H. P. each, 120 lbs. steam.
1 54"x16" Horizontal Return Tubular, 70 H. P., 100 lbs. steam.
1 150 H. P. Manning Vertical, 125 lbs. steam.
Large stock of vertical types, all sizes.

ENGINES

20"x48" Watts-Campbell Corliss.
26"x60" Corliss. 16"x36" Nordberg.
24"x54" Brown. 14"x36" Allis.
22"x42" Greene. 14"x20" Russell.
20"x42" Greene. 12"x22"x42" Greene.
20"x42" Buckeye. 12"x24" Wetherill.
18"x42" Corliss. 9"x24" Cooper.
Large stock of smaller sizes; also Automatic and Plain Slide Valve, Vertical and Horizontal.

DIRECT CONNECTED UNITS

1 100 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14"x14" Wright Center Crank Automatic Engine, 250 R. P. M.
1 50 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10"x18"x10" Westinghouse Compound Engine, 315 R. P. M.

PUMPS, HOISTING ENGINES, WESTINGHOUSE ENGINES, GAS AND GASOLINE ENGINES, AIR COMPRESSORS, HEATERS, STONE CRUSHERS, HEATERS, AND GENERAL EQUIPMENT.

LATHES

42"x18" Pond. 36"x22" Bement.
36"x16" James Moore Screw Cutting.
32"x14" Johnson. 24"x10" Fifeild.
32"x12" Fifeild. 22"x18" Harrington.
22"x8" Lodge & Davis.
21"x7" Pratt & Whitney.
20"x10" Rahn-Larmon, gap swings 27" gap.
20"x8" Bullard.
20"x10" American Patent Head, arranged for motor also.
19"x8" Gray. 16"x6" Fitchburg.
18"x7" Ames. 14"x6" Fay & Scott.
14"x7" Lodge & Shipley, geared head.
Large stock of smaller sizes.

SHAPERS

20"x30" Pedrick & Ayer Open Side or Traveling Head.
26" Gould & Eberhardt, not back geared.
20" Steptoe, back geared.
20" Steptoe, crank.
16" Heavy Duty Traveling Head.
16" Friction Drive, Hendey.
14" Steptoe.
12"x22" Traveling Head.
6" Boynton & Plummer.

PLANERS

36"x36"x12" New Haven.
33"x33"x12" Woodward & Powell.
23"x33"x12" New Haven, one head.
30"x30"x10" Standard, one head.
30"x30"x8" Pease, one head.
28"x28"x7" New Haven.
28"x28"x7" Wheeler, one head.
2 28"x28"x6" Niles.
22"x22"x6" Powell, two heads.
14"x14"x34" mounted on iron legs.

MILLING MACHINES

36"x12" Heavy Duty Slab Milling Machine, very powerfully geared and capable of taking a heavy cut.
No. 2 Cincinnati Plain.
No. 2 Van Norman Duplex Milling Machine; tables are 36"x39".
Pratt & Whitney Duplex Miller, with mill work 27" wide, 6" high and 6" long.
Garvin No. 1 Hand Miller.
No. 22 Garvin Vertical.

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800-lb. Bement, Miles & Co. Single Frame Steam Hammer.
600-lb. Pratt & Whitney Board Drop Hammer.
600-lb. Chambersburg Guided Rod.
100-lb. Little Giant Trip Hammer (new).
75-lb. Denelt & Eisenhardt Belt.

DRILLS

24" Gang Radial Drills (plain).
42" Hilles & Jones (plain).
24" Frontier.
24" Fitchburg.
Large stock of 21" and 20", as well as Sensi-tive Drills.

TURRET LATHES and SCREW MACHINES

28" swing 7' bed Davis Turret Head Boring Lathe, 2 1/2" hollow spindle.
20" swing Turret Head Davis Boring Lathe, 2" hollow spindle.
2 26" Garvin Turrets, 2" hollow spindle.
12" Foster & Kimball Wire Feed Screw Machine.
17" Foster & Kimball Friction Head Turret. No. 2 Garvin Wire Feed Screw Machine.
No. 3 Pratt & Whitney Screw Machine, 16" swing, 5' bed, spindle capacity 1 3/16".
18"x16" Lodge & Davis Plain Turret Lathe, 1 1/2" hollow spindle.
1 1/2" Bardons & Oliver Turret Lathe, with cut-off slide rest, 2 chucks, no wire feed.
Send for latest list, just issued.

Frank Toomey, Inc.

127-131 North 3rd St.

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In revising our manufacturing equipment we find the following first-class

Used Machine Tools

which we offer at attractive prices

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16 in. x 6 ft. Hendey, Q. C. G.
16 in. x 8 ft. Pratt & Whitney, Q. C. G.
16 in. x 8 ft. Reed.
18 in. x 8 ft. Lodge & Shipley, Q. C. G.
18 in. x 10 ft. Lodge & Shipley, Q. C. G.
20 in. x 8 ft. Lodge & Shipley, Q. C. G.
20 in. x 10 ft. Lodge & Shipley, Q. C. G.
24 in. x 8 ft. Lodge & Shipley, Q. C. G.
27 in. x 10 ft. Lodge & Shipley, Q. C. G.
36 in. x 12 ft. Lodge & Shipley, Q. C. G.
36 in. x 14 ft. New Haven.

SPECIAL LATHES

24 in. x 7 ft. Lodge & Shipley Chucking Lathe.
No. 3 Lodge & Shipley Rapid Reduction Lathe.

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No. 3 Nutter-Barnes Cold Saw.
Franklin Cold Saw, 3 1/2 in. capacity.
Globe Power Hack Saw, 8 in. capacity.

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Whitton Centering Machine.
Mumford 12 in. x 40 in. Molding Machine.
Write for complete description with prices of machines in which you are interested.

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Second-hand Electric Motors

We have the largest stock of second-hand electric motors and generators in America, and buy and sell, rent, exchange and repair electrical machinery of all kinds. Send for our "Monthly Bargain Sheet," showing complete stock with net prices. All machines guaranteed in good order.

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Consisting in part of 1 complete Sturtevant Hot Air Dry Kiln, 2 Double Sturtevant Fans, 7 Planers and Matchers, 1 60" Band Resaw, 2 Molding Machines, 1 End Matcher, 2 Boring Machines for flooring, 3 Power Rip Saws, 1 Shaving Press. Also Morgan Machine Co.'s Open Back Nailers, Lock-corner Machines, Setting-up Machines, Trimmer Saws, Rip Saws, Cut-off Saws, Power Matchers, etc.
Special bargain on Dry Kiln.
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Two 11 x 20 x 12 x 18 Compound Condensing Jeausville Steam Pumps in first-class condition. Price right.

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ENGINES and BOILERS, all types up to 1000 H. P.
Let me know your wants.

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18"x18"x24" Ingersoll-Sergeant.
14"x9"x12" Ingersoll Two-Stage, "Imperial" type.
12"x14"x14" Hall, steam driven.
14"x12" Laidlaw-Dunn, belt driven.
12"x12"x12" Laidlaw-Dunn, steam driven.
And many others.

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1000 H. P. Berryman Gleaner.
800 H. P. Wheeler, New.
600 H. P. Berryman.
500 H. P. Berryman.
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Two (2) 16"x10"x10" Worthington Duplex.
One (1) 500-gal. Underwriters' Fire Pump.
One (1) 750-gal. Underwriters' Fire Pump.
500 H. P. Conover Jet Condenser, complete.
Vacuum and Condensing Pumps, all sizes.

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PIPE CUT TO SKETCH

CONTRACTORS' EQUIPMENT OF EVERY DESCRIPTION

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The best and the cheapest.
Let me know what you have for sale and what you want to buy.

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1 complete 600-light Plant, \$350.
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Large stock of Engines, Pumps, Air Compressors, all in A-1 condition.
35 H. P. Boilers at \$175.
Railroad Rails, 16-lb. to 70-lb.
1/2" pipe from 1" to 12".

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GIRARD MACHINE & TOOL CO.,

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14x6 Putnam, C. R., P. C. F.
14x5 Reed, R. & F.
15x6 Putnam, chuck and taper.
15x6 Robbins, compound rest.
16x6 Reed, C. R., P. C. F. taper.
16x8 Porter, compound rest.
18x6 Lodge & Davis, C. R., P. C. F.
18x8 American, taper chuck.
18x8 Putnam, R. & F. rest.
20x8 McMahon, C. R. chuck.
20x9 Pratt & Whitney, compound rest.
20x10 Prentiss, C. R., P. C. F.
20x10 Draper, C. R., P. C. F.
24x14 Reed, high speed.
26x12 Pond, C. R. and chuck.
26x22 New Haven, plain turning.
27x12 Pratt & Whitney, C. R., P. C. F.
30x12 Niles, C. R., P. C. F.
32x12 Johnson, triple geared, C. R.
32x17 Bement-Miles, C. R., triple geared.
36x14 and 16 Lodge & Shipley, C. R., P. C. F.
36x16 Reed, C. R., P. C. F.
38x14 Pond, P. R., P. C. F.
38x20 Fay & Scott, C. R., P. C. F.
40x18 Newark, triple geared, C. R., P. C. F.
46x38 Fitchburg, compound rest, P. C. F.
84x20 Putnam, C. R., T. G.
102x35 Bement, compound rest, P. C. F.
An assortment of speed lathes.

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20x8 Bogart, turret on carriage.
2 1/2" Pearson, F. B. G., P. F.
18x6 Fay & Scott, plain turret.
3" Pratt & Whitney, hub former.
24" American, heavy turret.
24x4 Jones & Lamson, flat turret.
20x6 Bardons & Oliver, F. B. G.
No. 2 1/2" Warner & Swasey, wire feed.
No. 1 Garvin, wire feed.
4" National Acme, automatic.
3" Pratt & Whitney, screw shaver.
No. 3 Warner & Swasey, hollow hexagon.
No. 6 Brown & Sharpe, friction head.
1" Smurr & Kamen, wire feed.
1/2", 3/4", 1" and 2 1/2" Pratt & Whitney, automatics.
3 1/2" spindle Gridley, automatic.
1 1/2"x18" Pratt & Whitney.

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No. 4 1/2" Becker, small plain.
No. 2 Le Blonde, plain, back gears.
No. 2 Pratt & Whitney, Lincoln pattern.
No. 3 Cincinnati, plain.
No. 12 Brown & Sharpe, manufacturers'.
No. 15 Brainerd, small universal.
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BATH STREET BRIDGE.—One 72' 6" span through Pratt truss bridge; 2 trusses spaced 24' c. to c.; depth of truss 12'; 6 panels 12' 1" each; one roadway 18' 8" wide, and two footways 9' each wide; 2 15" wrought-iron I floor beams suspended at each panel point.

FAYETTE ST. BRIDGE.—One 79.2' span through Pratt truss bridge; 3 trusses spaced 16' c. to c.; depth of trusses 12'; 6 panels 13.2' each long; two roadways each 13' wide; two footways 7.4' each wide; two 15" wrought-iron I floor beams suspended at each panel point.

GAY ST. BRIDGE.—One 75' span through Pratt truss bridge; 10 panels 7' 6" long (each); three trusses 10' deep at center and 7' 6" deep at ends, spaced 20' c. to c.; 18" built floor beams; beams extend 10' 7" beyond outer trusses to support footways; two roadways 15.4' wide; two footways 7' 6" wide each.

HILLEN ST. BRIDGE.—One 72' 6" span through Pratt truss bridge; three trusses 12' deep, spaced 16' center to center; 6 panels 12' 1" long; two roadways each 12' 9" wide; two footways 8' 6" wide; two 15" wrought-iron I floor beams suspended at each panel point.

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These bridges are now in use and will be carefully removed and delivered f. o. b. cars Baltimore. They are in excellent condition. Detailed description and photographs furnished on application.

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\$1600.00

50 K. W. General Electric 125-volt 6-pole Dynamo, direct connected 2-cylinder vertical gasoline engine, complete, perfect condition, \$1600, f. o. b. New York. Can be changed for gas at about \$100.

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Hudson Terminal NEW YORK

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Lillie Quadruple Effect

150,000 gallon capacity, with condenser, suitable for sugar or soda solutions. A bargain. For further particulars, apply to

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We offer for sale at a sacrifice
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- 3 35 H. P. Commercial Motors, D. C., 220 volts, with starting boxes.
- 1 25 H. P. Commercial Motor, D. C., 220 volts, with starting box.
- 1 5 H. P. Commercial Motor, D. C., 220 volts, with starting box.
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- 3 350 H. P. B. & W. Water-Tube Boilers, 160 lbs.
- 2 1000 H. P. Berryman Heaters.
- 1 500 H. P. Berryman Heater.
- 1 72"x135" Stack.
- 2 Davis Triple Belt-Driven Pumps, 6"x8 1/2".
- 1 18"x10"x12" Worthington Underwriters' Pump.
- 1 10"x6"x10" Worthington Duplex Pump.
- 1 10"x12"x10" Worthington Duplex Pump.
- 1 4 1/2"x2 1/2"x1" Deane Duplex Pump.
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1 200 K. W., class M. P., 550 volt G. E. railway generator, with extra armature, belt driven, with one 16"x28"x42" Hamilton cross-compound engine, with jet condenser. In good operating condition. Located at Hot Springs, Ark.
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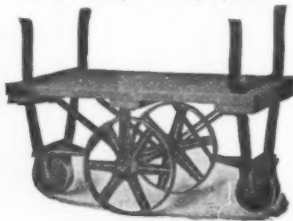
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- 3 Boilers.
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 - 1 Pump Car, standard gauge.
 - 2 Rail Cars, standard gauge.
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 - Drykiln Pipes, Headers, etc.
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2 18 H. P. Huber special length contract- or's traction engines, Nos. 9020 and 9027, each	Newburgh, N. Y.
1 26 H. P. Huber traction engine No. 8277.	Pittsburgh, Pa.
6 Port Huron spreading car wagons, each.	Pittsburgh, Pa.
1 Class B Lidgerwood-Crawford excava- tor with 60 ft. boom, 1½ cu. yd. Page scraper bucket, in good working con- dition	Newburgh, N. Y.
1 Model G Marion steam shovel.....	Newburgh, N. Y.
1 Improved A Marion steam shovel.....	Pittsburgh, Pa.
1 18-ton H. P. Porter locomotive, shop 2190-36 in. gauge.....	Branch, Pa.
2 22 and 13x16 Imperial X-2 belted air compressors, as good as new, with 8 in. unloaders for same, complete, at each	Elmsford, N. Y.
1 16x10x14 Imperial X-2 belted air com- pressor. Same as above.....	Elmsford, N. Y.
1 30 H. P. straight line Ingersoll com- pressor, No. 379.....	Branch, Pa.
2 1-14-200 H. P., 514 R. P. M., 2200 volts, form M, 3-phase, 60-cycle, G. E. mo- tors, complete with all switchboards and indicating apparatus, at each....	Elmsford, N. Y.
1 10-100 H. P., 720 R. P. M., form K, 2200 volts, 3-phase, 60-cycle, G. E. motor, complete with all switchboards and indicating apparatus.....	Elmsford, N. Y.
1 40 H. P. Nagel boiler with engine mounted	Pittsburgh, Pa.
1 20 H. P. Porter-Donaldson Economic boiler	Pittsburgh, Pa.
1 50 H. P. horizontal boiler, 4 ft. 6 in. diam., 14 ft. long, 54-2½ in. tubes....	Pittsburgh, Pa.
1 50 H. P. vertical boiler mounted on trucks, submerged tubes.....	Pittsburgh, Pa.
1 100 H. P. 60 E. Erie Economic boilers..	Pittsburgh, Pa.
1 50 H. P. Porter-Donaldson side-valve engine band wheel, 16 in. face, 16 in. diam.	Pittsburgh, Pa.
1 5 H. P. engine.....	Pittsburgh, Pa.
1 40 H. P. Atlas engine, band wheel, 16 in. face, 16 in. diam.....	Pittsburgh, Pa.

	LOCATION.
1 10 H. P. Erie engine, 10x16.....	Pittsburgh, Pa.
1 10 H. P. vertical engine, Nagel No. 12,711	Pittsburgh, Pa.
1 100 H. P. single-cylinder, 13x18 center- crank, high-speed engine, 78x20½ fly- wheel, made at Erie Engine Works, No. 10,404, known as No. 13 C. C.....	Newburgh, N. Y.
1 Epping-Carpenter No. 6 single-plunger pump, No. 1465, 10x6x12, in good order	Pittsburgh, Pa.
1 Wilson-Snyder duplex pump, No. 1806, 10x6x15	Pittsburgh, Pa.
1 Wilson-Snyder pump, 4x2x7.....	Pittsburgh, Pa.
1 Epping-Carpenter pump, 4x6x2.....	Pittsburgh, Pa.
1 3x2x3 Blake feed pump.....	Newburgh, N. Y.
1 Fairbanks type A reciprocating pump, gasoline	Pittsburgh, Pa.
1 Fairbanks 3 in. x 2½ in. centrifugal pump, gasoline.....	Pittsburgh, Pa.
1 No. 4 B Gates crusher with extra head, shaft, eccentrics.....	Pittsburgh, Pa.
1 No. 3 Shorthend McCully gyratory crusher	Newburgh, N. Y.
1 40 in. x 14 ft. rotary screen, dust jack- ets, ¼ in. mesh plates, 1 in., 1½ in., 2½ in.	Newburgh, N. Y.
1 No. 6 belt elevator, 66 ft. center to cen- ter, 18 in. buckets.....	Newburgh, N. Y.
1 No. 4 Ransome concrete mixer, No. 1960, 40 cu. ft. capacity, batch hopper, com- plete with engine.....	Newburgh, N. Y.
1 No. 3 Foote continuous concrete mixer, with engine and boiler, mounted....	Pittsburgh, Pa.
Rock drills, air and steam of all sizes, Ingersoll, Murphy, Dallett, Sullivan and Hardsocg makes.	Pittsburgh, Pa. Newburgh, N. Y. Elmsford, N. Y. Elizabethton, Tenn.
1 No. 10 Penfield brick machine; capacity 3500 brick per hour.	Pittsburgh, Pa.
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1000 tons, first class, 40-lb., with angles.
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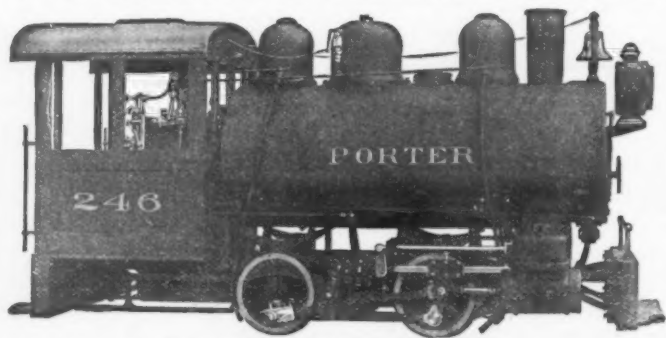
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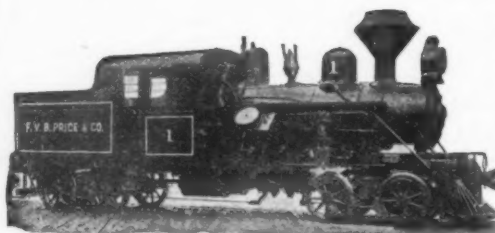
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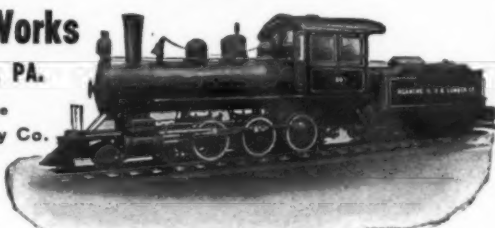
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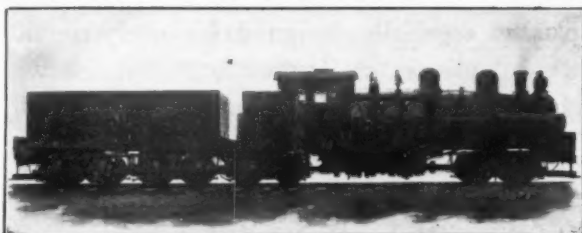
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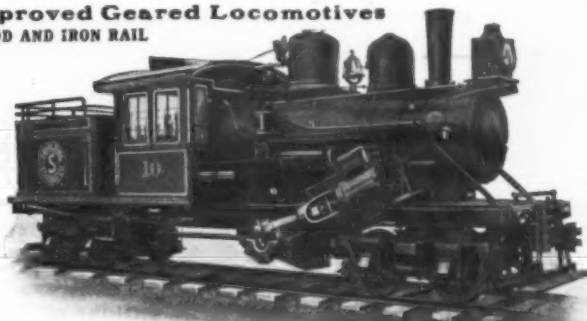
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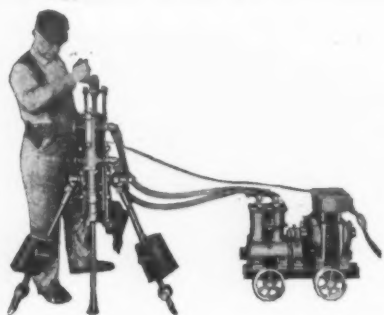


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They now have five "Electric-Air" Drills, each one of which is putting in 100 to 120 feet of hole (holes 5 to 12 feet deep) in a nine-hour day, with one man (no helper) to a drill.

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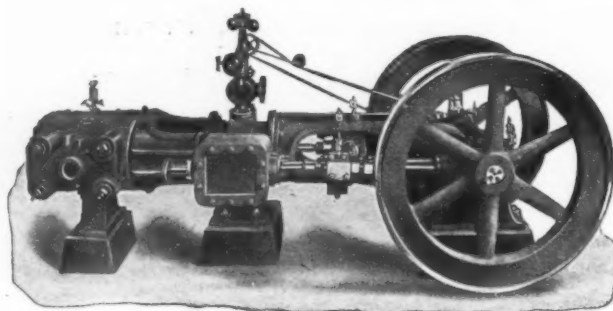
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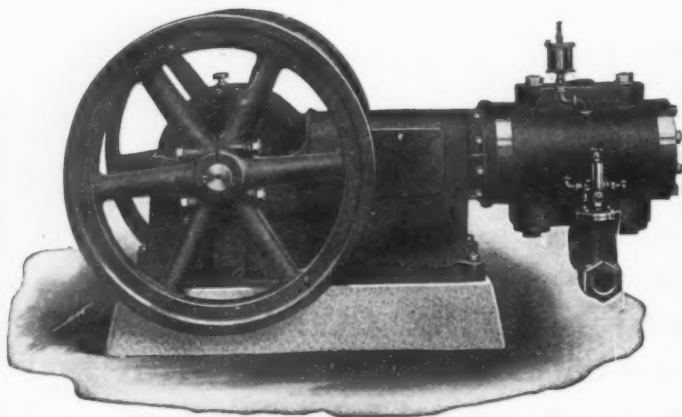


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WICKES BROTHERS MURPHY LITTLE CHAMPION ROCK DRILLS

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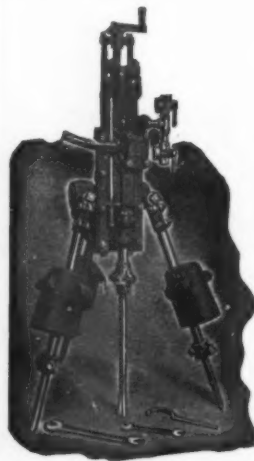
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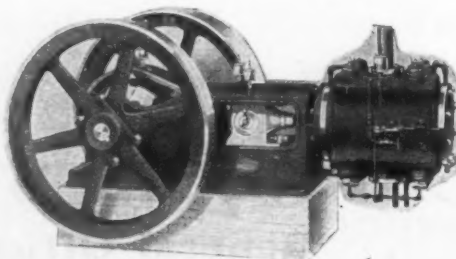
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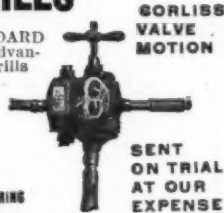
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Represent the highest STANDARD in AIR TOOLS. The many advantageous features which these drills possess result in the greatest efficiency and have caused them to become the most popular machines of their kind on the market.



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This type can be furnished MOUNTED with Air Receiver, on substantial running gear and large wheels, representing the most advanced and complete ideas in a portable compressor outfit. Manufactured by

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Made in all sizes, from 1½-ton to 2-ton capacities.

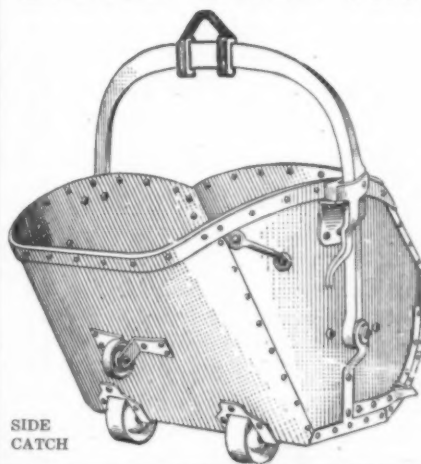
We make all sizes and styles of contractors' buckets, and can refer you to a large number of satisfied Southern users.

Made with either Back or Side Catch.

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The oldest shop in America making Contractors' Buckets.



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Single
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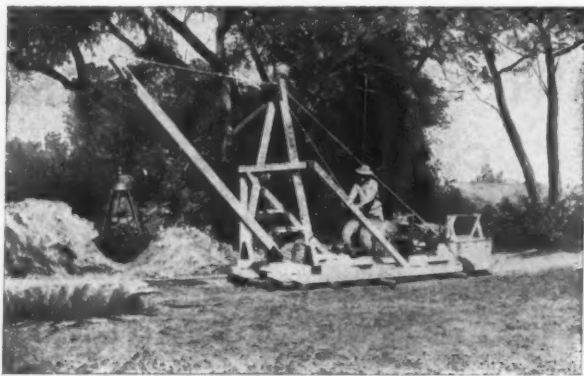


Illustration No. A1364.

Reduce Ditch Work Costs

Greater crops and more profit come from cultivating the soil along scientific lines. With a lower first cost and the lowest possible cost of operation.

Hayward Plantation Machines

mean cutting the costs of canal and ditch work to the lowest point.

This type of machine is light, easily handled, rapid in work and has innumerable uses. It can be worked on land, as shown in Illustration No. A1364, or can be worked in canal, lateral or drainage ditch work as shown in lower view, Illustration No. A1374. In addition, these machines are unequalled for removing snags and stumps, cleaning out mill and logging ponds, draining swamp lands and for irrigation work generally—saving 100% to 500% over hand labor costs.

Prices quoted on Buckets only, suitable for use with any type of operating machine, or prices quoted for Buckets and complete machines. Write for Catalog. We guarantee that we can save you money on your canal and ditch work.

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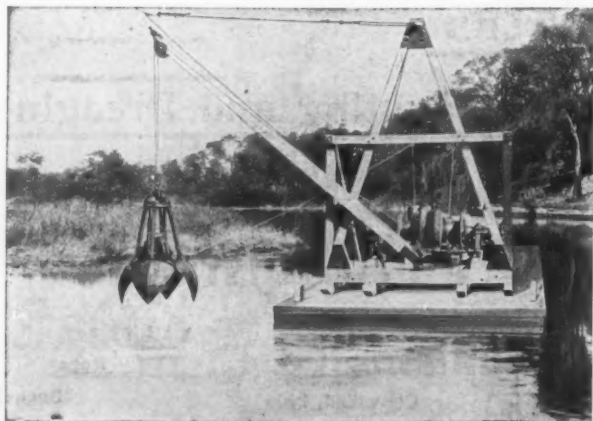


Illustration No. A1374.

WHEN THE DIGGING IS FAIR,
FEW SHOVELS WILL FAIL

BUT YOU NEED A

BUCYRUS

IN ROCK



**BUCYRUS STEAM SHOVELS
ARE BUILT TO STAY**

WE ALSO BUILD

DRAG-LINE EXCAVATORS

RIVER, HARBOR AND DITCHING DREDGES

PLACER DREDGES

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UNLOADING FLOWS

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TESTED STEEL CHAIN

Certificate
of test with
every order
Avoid acci-
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DEPENDABLE CHAIN

Ask for catalog "C"

**Jones & Laughlin
Steel Company**

AMERICAN IRON & STEEL WORKS

Pittsburgh



Monighan Drag Line Excavators

STEAM AND GASOLINE POWER

The excavator shown in this cut can be placed on the work at less cost than any other excavating outfit. Crew for operating machine consists of only two men. The excavator is mounted on traction wheels provided with self-propelling mechanism. Boom is 40 ft. long. One cubic yard bucket. We will give you, upon request, full information regarding capacity, cost of operation, etc.

We build excavators with booms from 40 to 125 ft. long and buckets from one to three cubic yard capacities.

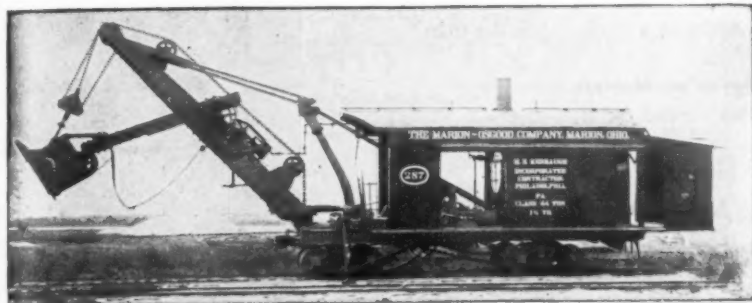
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Monighan Machine Company

2022 Carroll Ave., Chicago

Sales Agencies: P. B. Engh, 341 Pacific Elec. Bldg., Los Angeles, Cal.; E. Buckmaster, 305 Weis Bldg., New Orleans, La.

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STEAM SHOVELS, DREDGES, BALLAST UNLOADERS, All Sizes

Manganese racks and pinions
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Substantial front end construction
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Specially strong boom
Gears with machine cut teeth
Large boiler and water tanks
Enclosed firing platform

Eastern Office: No. 51 State Street, Albany, N. Y.

Write fully covering your requirements. The advice and experience of our excavation experts is at your disposal.

J. J. GRAY, JR.
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Mr. E. A. Palmer
Palmer Chain & Iron Company,
Lebanon, Pa.

Dear Sir:

Please ship me one 10/16" rotating chain for my steam shovel. I have forgotten the length of it, but you can find out of course, by referring to the invoice for the last chain you shipped me. Will want this shipped to my address at Rockford, Ill. Please do not forget this address.

Very truly,
J. J. Gray, Jr.

*my best. with your chain are
the best he has ever used*

The above postscript is just what we have been endeavoring to impress upon you in our previous advertising—that our CHAIN is the best that can be manufactured.

Send in your orders and allow us to please you as we have done for this friend and hundreds of others.

For this reason alone we can truthfully say that the stamping of our products "W. C. & I. Co.," is a guarantee of quality.

Our specialty: Steam Shovel, Dredge, Crane, Quarry, Vessel and other High Grade Hand Made Tested Chains.

Weimer Chain & Iron Company

Lebanon, Pa., U. S. A.

"AJAX"

Dredge, Steam Shovel, Conveyor, Log-Haul

and

Steel Loading Chains

"AJAX" means *Quality*, and is the Standard today.

Why buy Chain *claimed to be equal* when you can buy *genuine*?

Manufactured only by the

Standard Chain Company

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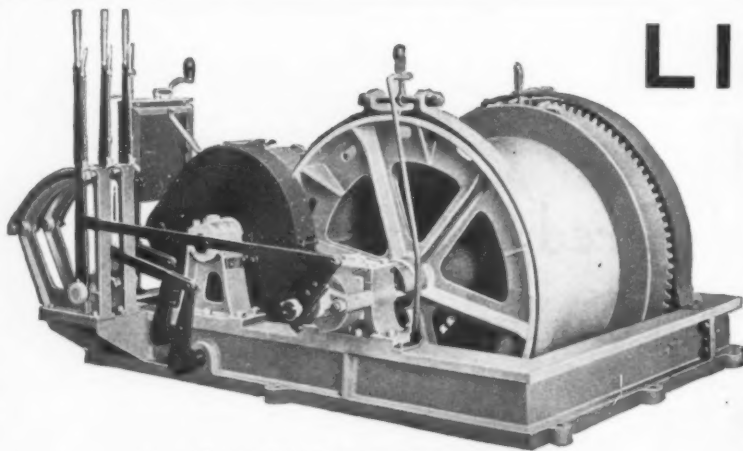
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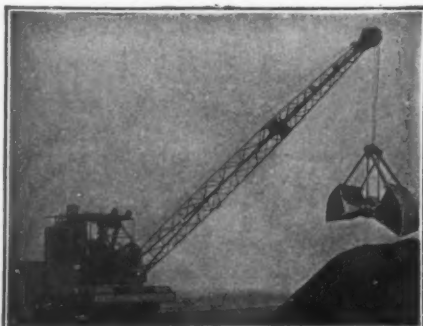
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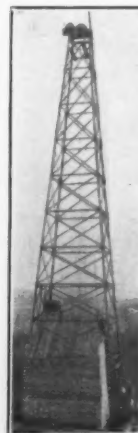
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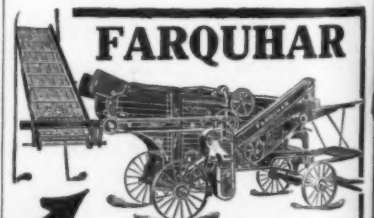


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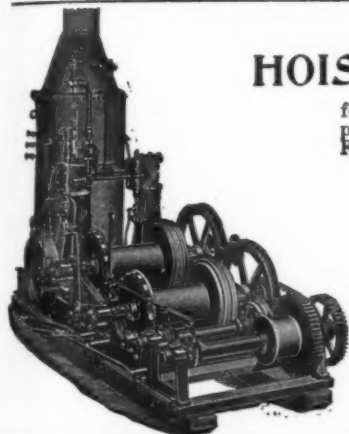


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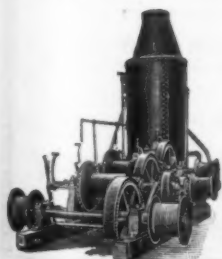
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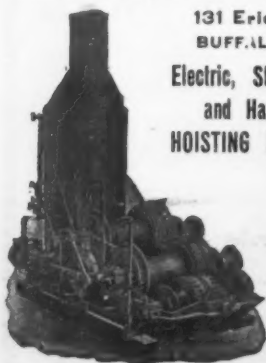
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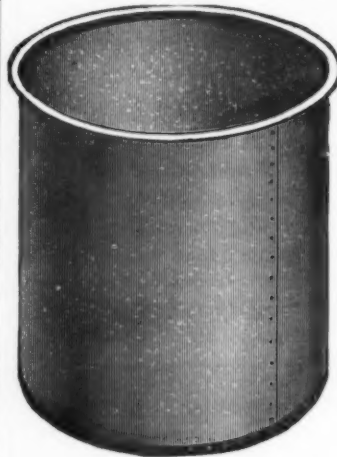
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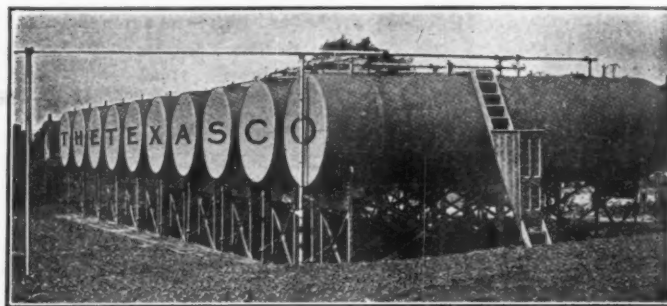
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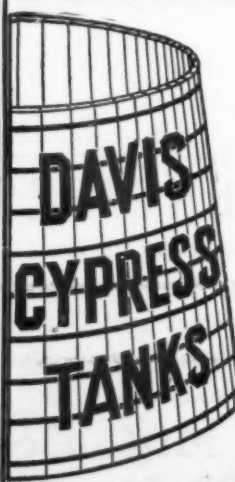
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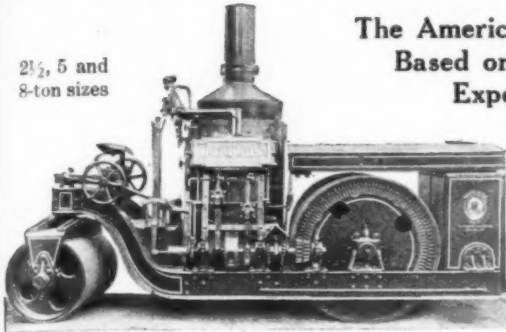
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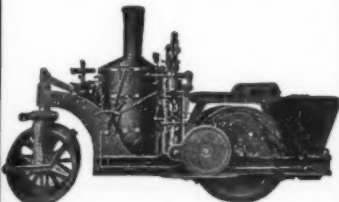


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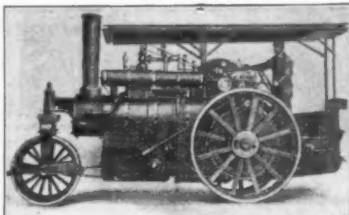
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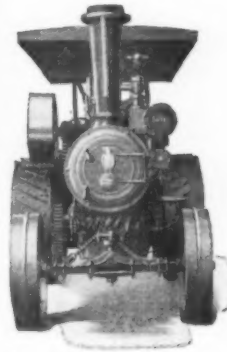
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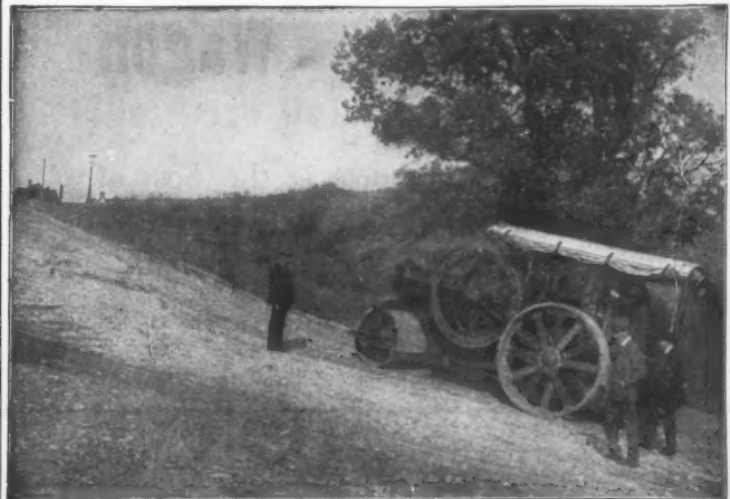
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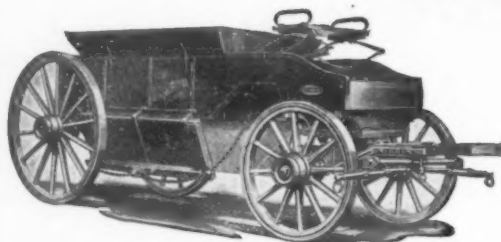
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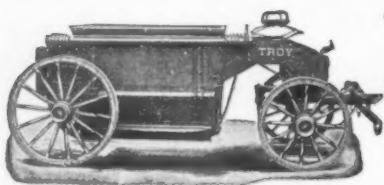
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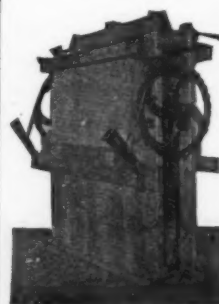
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TANKS, TROUGHS, Etc.

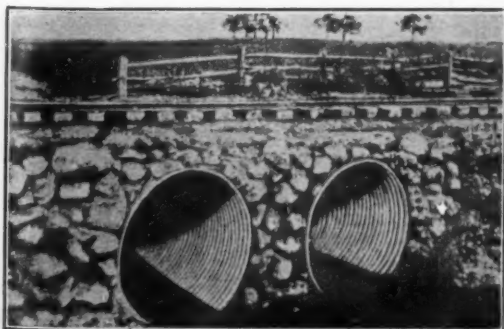
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When You Have Just Put a Union on the Line, Is It Always Tight?

Of course it is tight if it is a "KEWANEE" UNION, and there will be no chance of a leak either now or in the future.

Why?

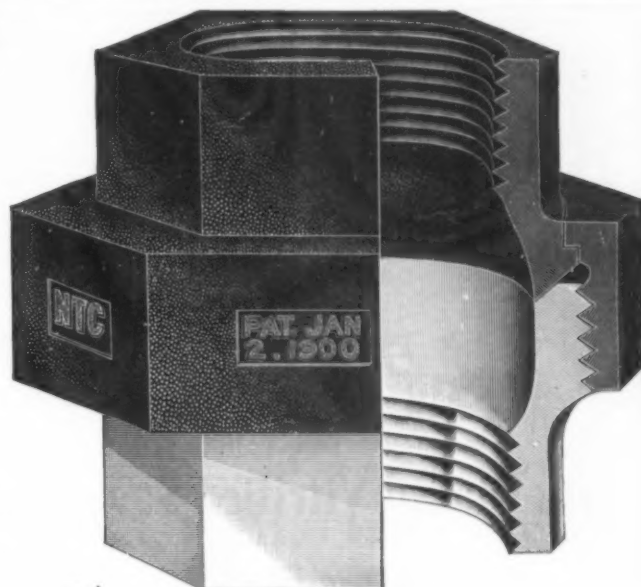
The explanation is very simple—THE TEST—125 pounds compressed air under water.

It must be clearly understood that this rigid test is applied to every, single, individual "KEWANEE" UNION.

Not merely to a certain per cent. of "KEWANEE" UNIONS—but EVERY "KEWANEE" UNION—of every type—must individually pass this test. Any union is scrapped which, while under the test pressure, causes a bubble to form on the surface of the water.

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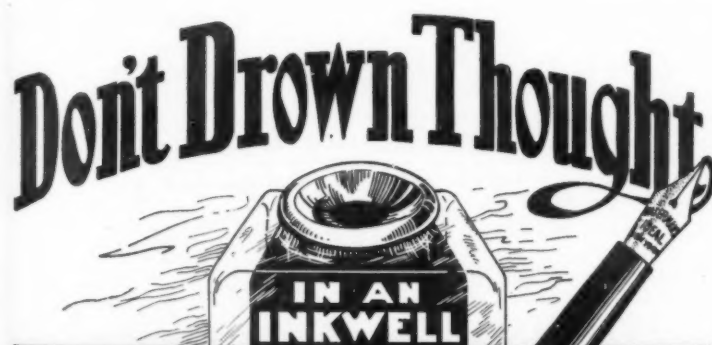
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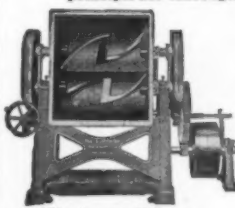
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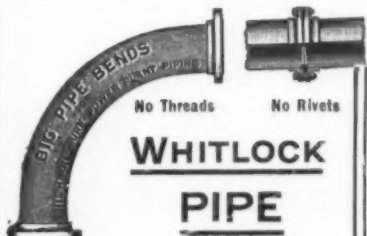


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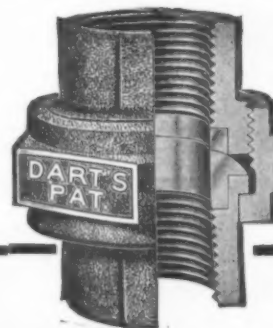
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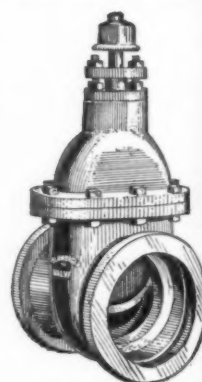


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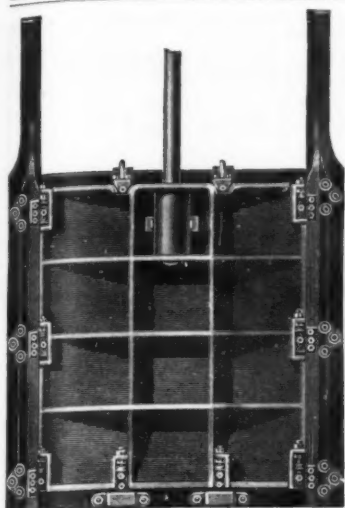
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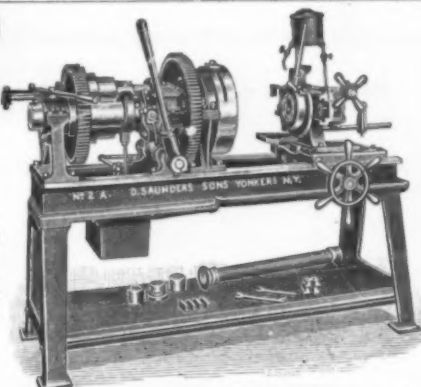
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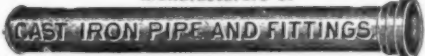
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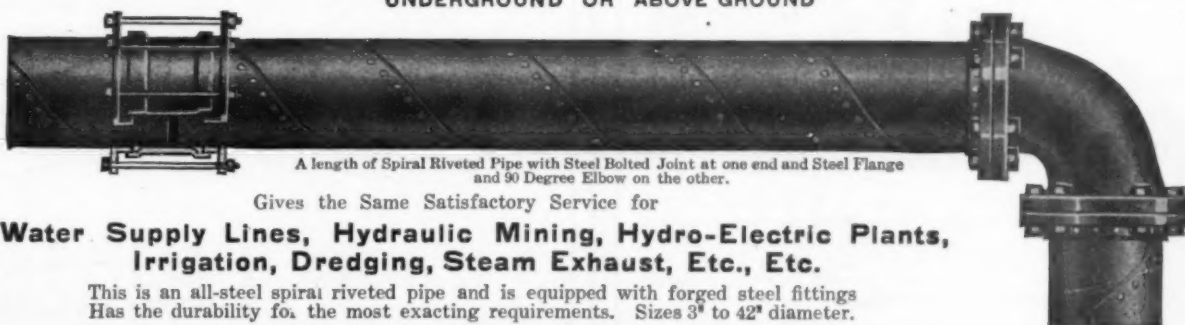
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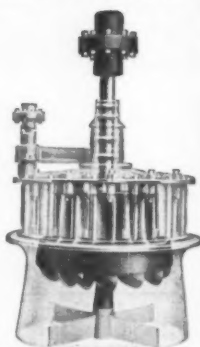
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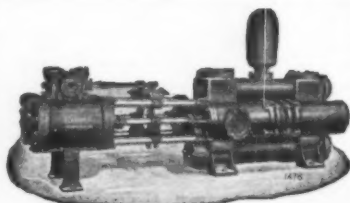


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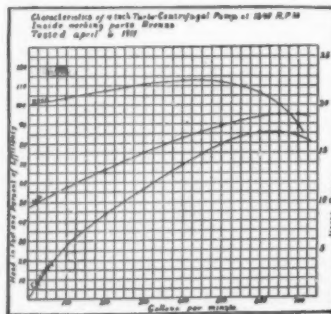
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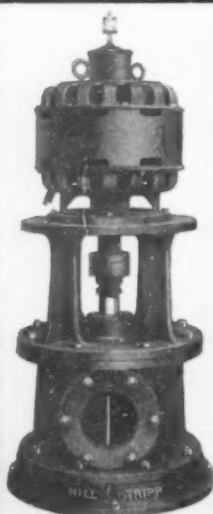


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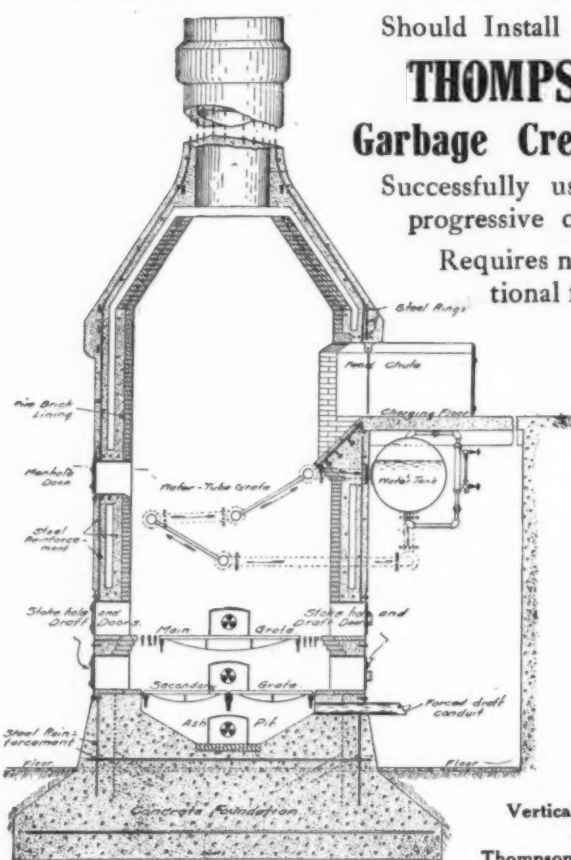
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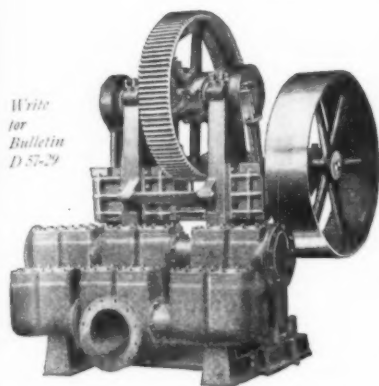
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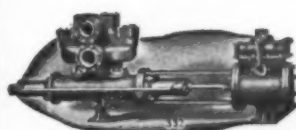
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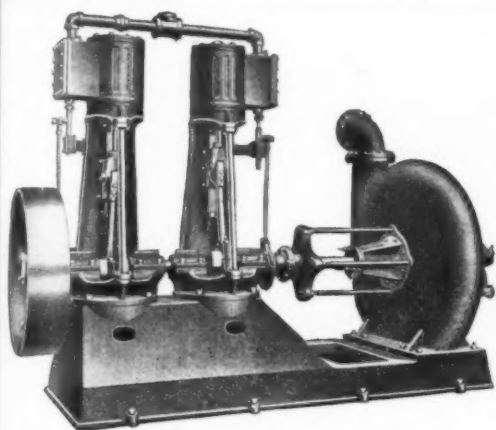
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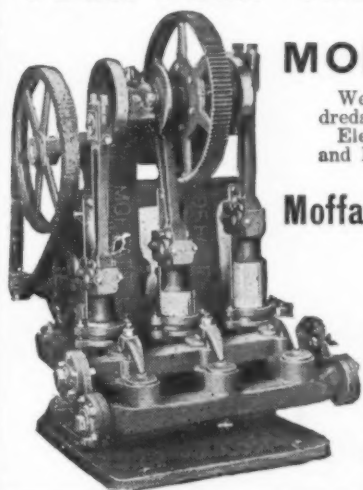
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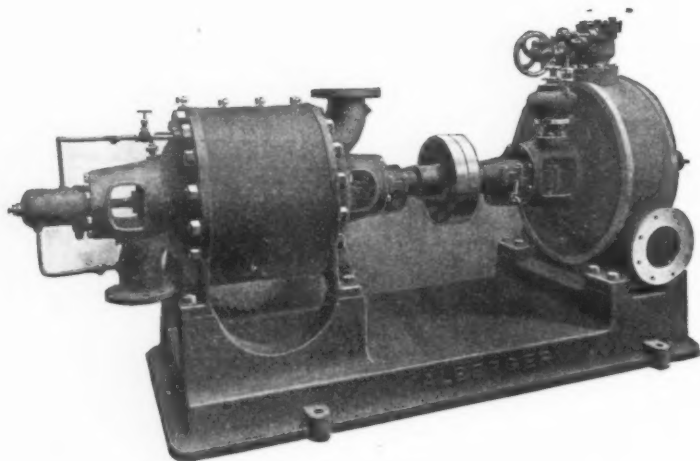


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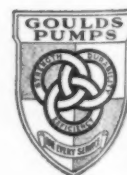
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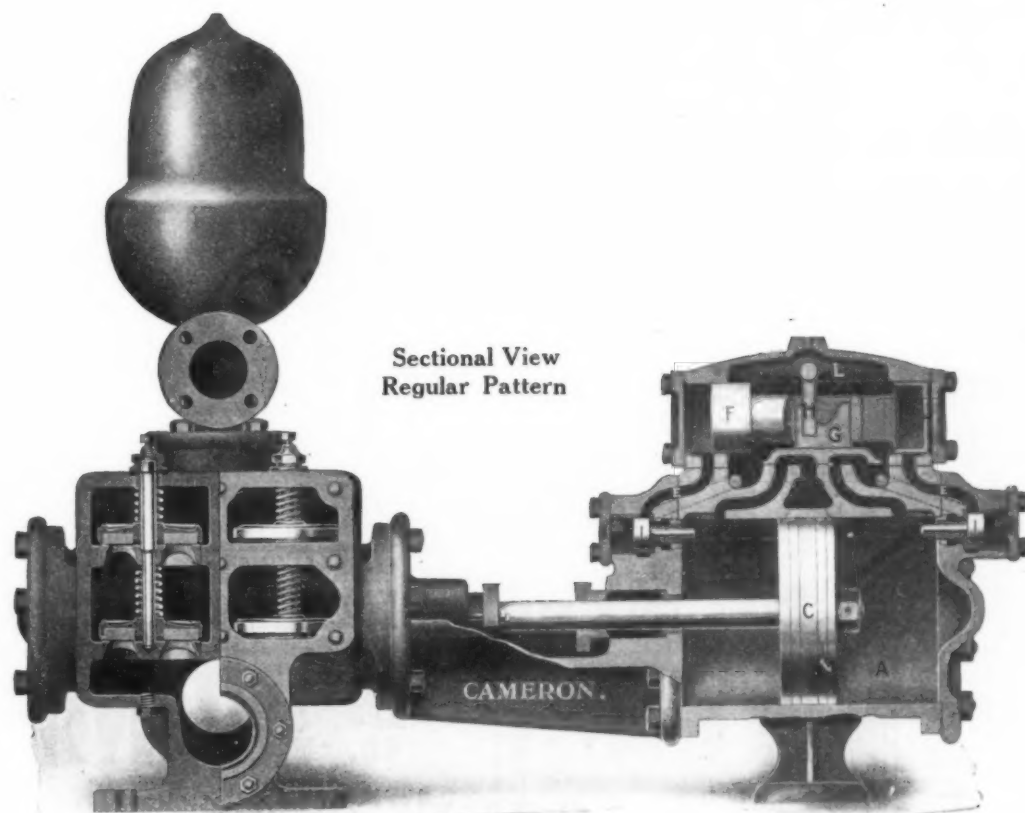
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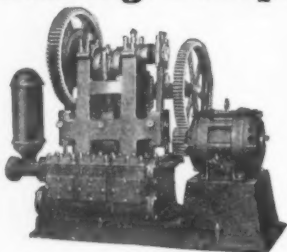
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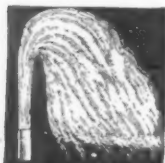
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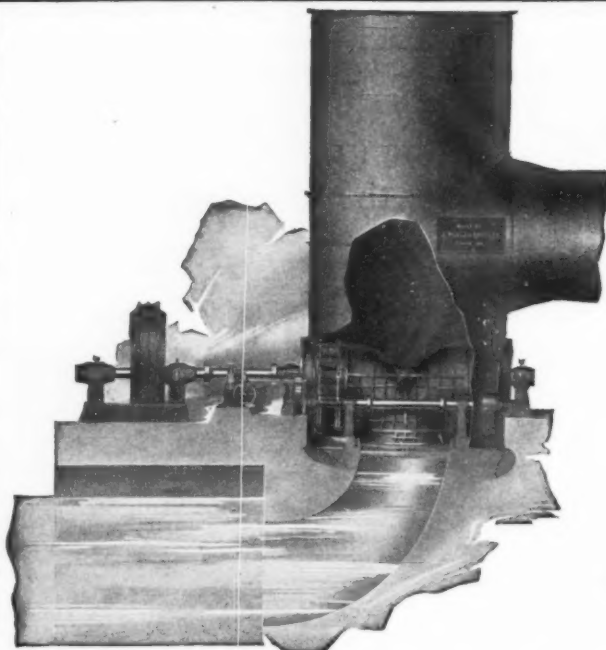


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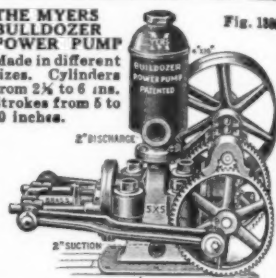
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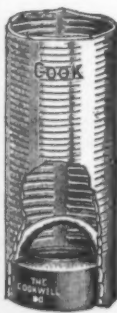
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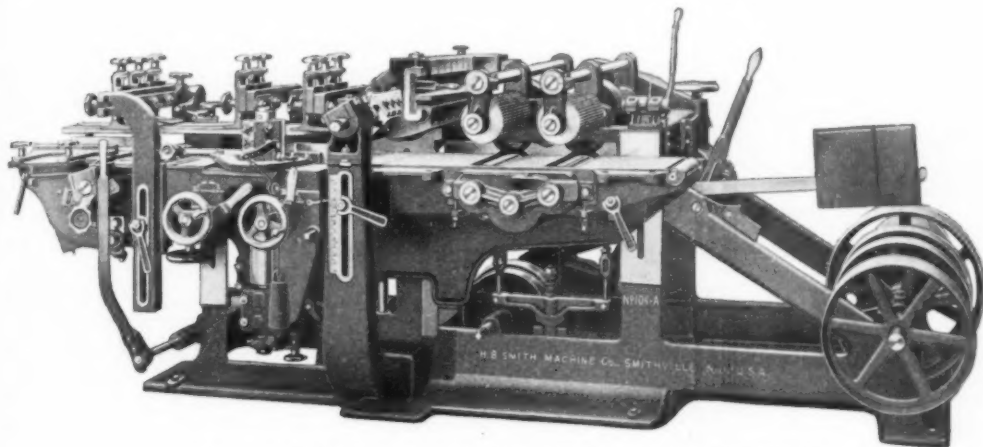
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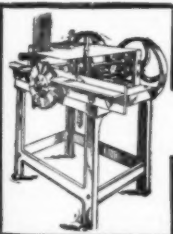
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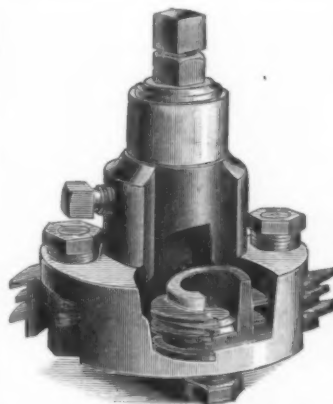
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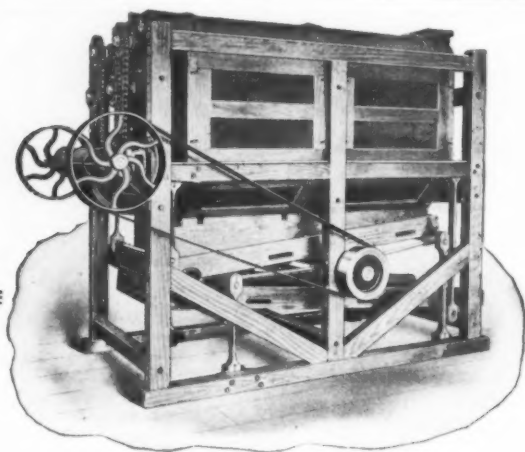
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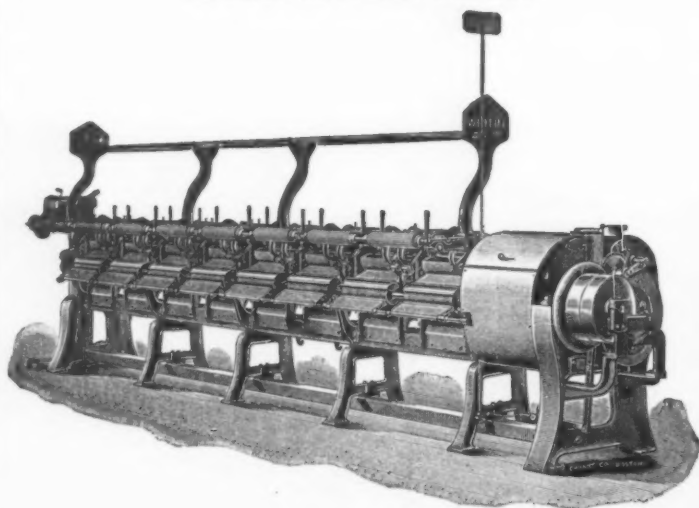
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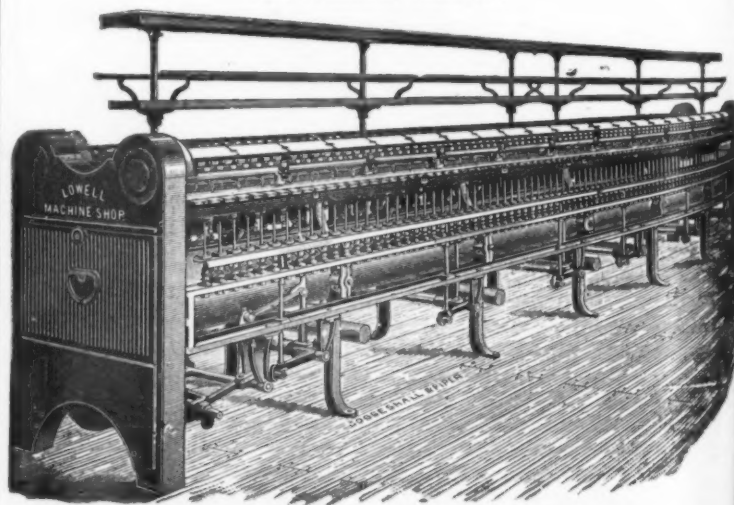
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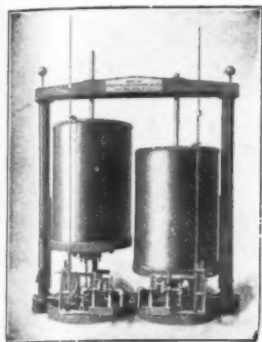
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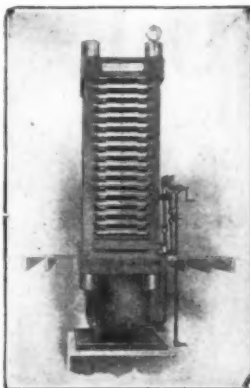
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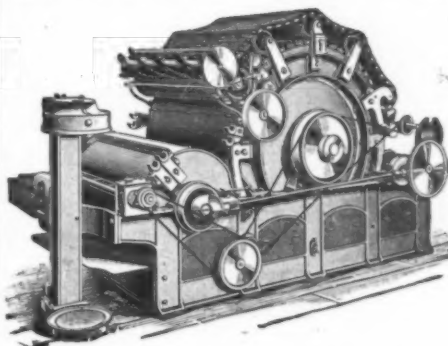
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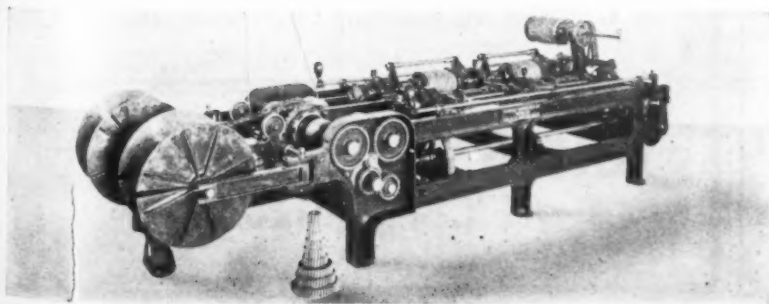


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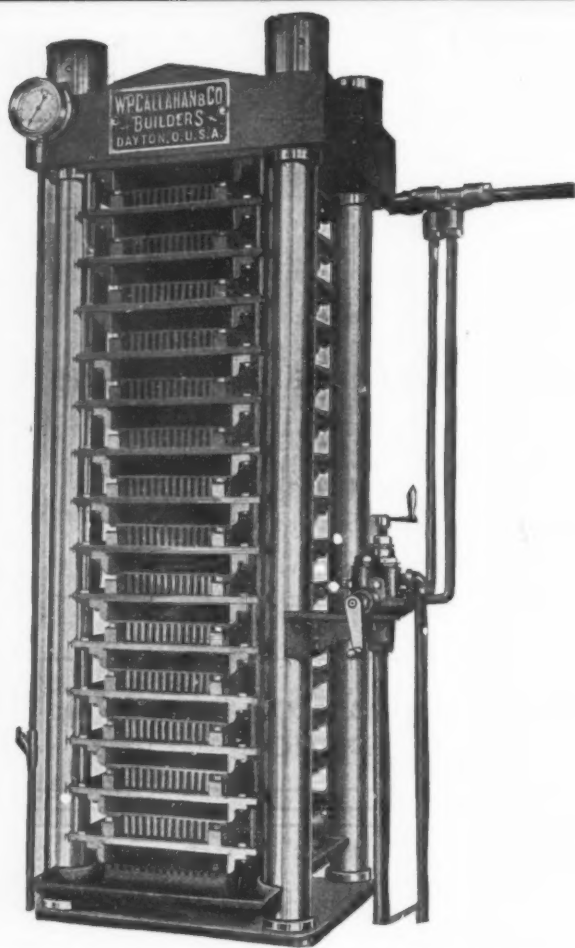
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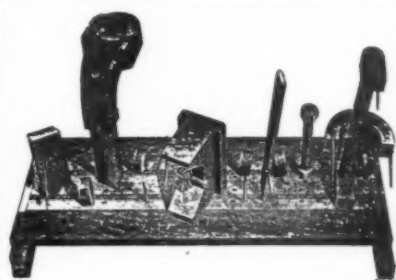
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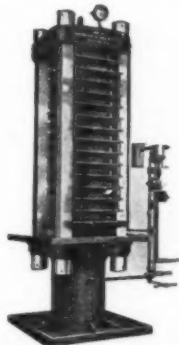
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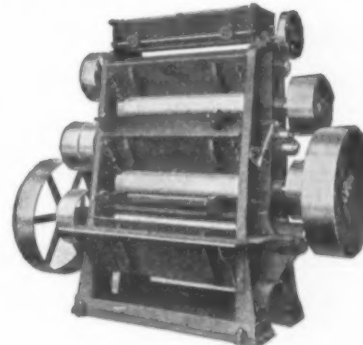
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A three-story brick building, 40x100 feet, with boiler and engine house attached, located in a beautiful North Carolina city, on railroad siding, is offered for sale without machinery. This plant is well adapted for a furniture factory or small cotton or knitting mill. Owner would either sell outright or become interested in starting a new business with a mutually interested party. Further particulars obtained by referring to file 4744.

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WASHINGTON, D. C.

Texas City, Texas

"Where the Greatest Rail Commerce of the World Must Meet the Greatest Water Commerce of the World"

IT is a generally recognized fact that the great Southwest, and especially the Gulf Coast country of Texas, is now enjoying an era of commercial and industrial development such as has never been known in any section of the country before.

This is not a temporary movement, but grows more active with each passing month.

Do you know the reason why?

The vast, and as yet practically untouched, resources of this section are beginning to attract the attention of capital. Lack of rail and water transportation facilities has rendered it almost impossible heretofore to exploit them. Today a great transformation is taking place.

The railroads of the country are awakening to the fact that, with the opening of the Panama Canal, the tremendous traffic of the South and Southwest will seek an outlet to the sea by way of the Gulf of Mexico. In anticipation of this move—which is even now well under way—they are improving and extending their lines toward the sea.

Waterfront property all along the Gulf Coast is being developed for harbor and terminal purposes.

Result—

Millions upon millions of acres of prairie lands are being converted into farms. Thousands upon thousands of people, lured by the exceptional opportunities to be found here, are pouring into the State every year.

Cities and towns are springing up as if by magic.

A great and growing demand for factory-made goods is being developed.

Factories of every description are building, and the whole territory is developing into an ant heap of human activity.

Texas City, Texas, by reason of its strategic position; the remarkable development of its waterfront for harbor and terminal purposes; the installation of the most modern and comprehensive dock, warehouse and terminal facilities, and the fact that nearly all of the railroads of Texas have their termini at or in the vicinity of this place, is now recognized as "the core of the Gulf Ports movement," and offers the manufacturer opportunities and advantages that cannot be found elsewhere.

Factories of Every Description are a Pressing Necessity of the Great Southwest

By reason of the remarkable development, the tremendous increase in population, and the general forward movement of this section, a great and growing demand for factory-made goods is being created. The factories already located here are unable to keep up with this demand, notwithstanding that they are constantly enlarging and improving their plants. Factories, therefore, are a pressing necessity of this territory. A great many are now locating here, but the field is practically unlimited.

No cash or similar bonuses are offered industries to locate at Texas City. Only self-sustaining institutions are encouraged. To these the Texas City Company, and other companies, offer a few attractive inducements; such as free factory sites, free artesian water, cheap fuel, cheap electrical power, low storage rate and low insurance rate on same, low freight handling charges, and similar other inducements, all of which are of direct benefit to the manufacturer.

**COMPARATIVE STATEMENT
of Reg. Tonnage and Tons Cargo of
Vessels
1904 to 1911**

	Reg. Tons	Tons Cargo
1904	15,171	8,712
1905	82,214	76,007
1906	102,489	84,315
1907	102,504	77,459
1908	166,203	159,835
1909	234,708	180,003
1910	441,943	352,472
1911	515,964	444,695

Note These Figures

The figures to the right and left serve as an index to the increase in shipping via Texas City during the seven years from 1904 to 1911. Here is an increase in one item alone of over sixty-one hundred per cent. in seven years. It is confidently believed that the value of the commerce via Texas City for 1912 will exceed ONE HUNDRED MILLION DOLLARS.

**COMPARATIVE STATEMENT
of Shipping via Texas City
1904 to 1911**

	No. Vessels	Value of Cargoes
1904	12	\$ 998,428
1905	87	3,774,515
1906	115	5,738,094
1907	138	6,867,773
1908	199	22,875,732
1909	208	34,138,444
1910	239	47,213,753
1911	255	61,524,263

Literature Distributed by

Texas City Transportation Co.

Texas City, Texas

Florida Enjoying An Accelerated Growth

Between 1900 and 1910, while the United States as a whole increased in population by 21 per cent., the State of Florida increased by 42.4 per cent.

That was a big increase for a State to make, but from the present outlook the percentage of increase between 1910 and 1920 will be still larger.

The fact is the people of the country at large are just beginning to learn about Florida—that instead of being alone a winter playground and the home of those inclined to the raising of fancy fruits, it is a State of many industrial opportunities.

With this new knowledge is coming an accelerated growth that bids fair to make the percentage for the present decade pass that of the one just gone.

Florida now has almost 5000 miles of railroad, with a number of new lines under construction and branches of the old ones being thrown out in numerous directions.

It has also 1200 miles of ocean and gulf coast—the greatest expanse of any State in the Union.

In addition to these things it has 1175 miles of navigable rivers within its borders.

It has a combination of conditions that make it unrivalled in the production of fruits and vegetables, the equal of any for dairying and poultry raising.

Florida presents many opportunities also for profitable manufacturing in numerous lines—opportunities that are being rapidly taken advantage of, as witness the fact that the increase in the value of products manufactured in Florida was 112.7 per cent. from 1900 to 1910, while the increase throughout the whole country during the same time was 81.7 per cent.

Much of this increase was made in establishments doing business there which were forced by the demands of their trade to enlarge their plants and increase their output. They made the increase because they found their business profitable and wished to reap still greater profits.

But there is destined to be a greater increase in manufacturing during the present decade, for as Florida's possibilities and demands become better known and better understood they will be taken advantage of by energetic, enterprising men.

Especially are there many opportunities along the East Coast of Florida, the country traversed by the Florida East Coast Railway.

*Information concerning these opportunities
cheerfully furnished to those interested.*

Florida East Coast Railway

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

A Wealth of Timber

Lying along the Blue Ridge Mountains, tributary to the Carolina, Clinchfield & Ohio Railway, are virgin timber tracts conservatively estimated to contain 2,000,000,000 feet of valuable hardwoods.

This consists of 25% oak, 20% chestnut, 10% poplar, 25% pine, and 20% other varieties—ash, gum, hickory, walnut, buckeye, basswood, cucumber, etc.

Much of this timber stands in forests from which not a single stick has ever been cut.

This because there had been no way heretofore in which it could be gotten to market.

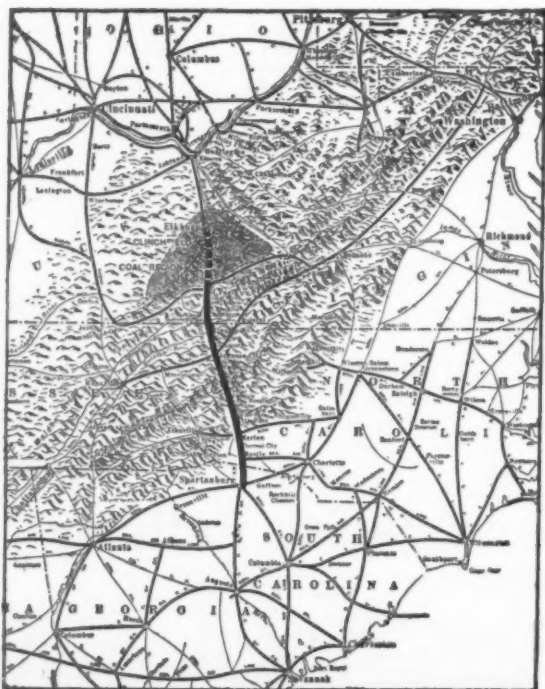
But the building of the Clinchfield road has opened up a way and the time has come when it can be profitably cut and sawed and turned to the many uses for which it is in demand.

The great abundance of timber along the Clinchfield opens up opportunities for profitable manufacturing that will not be long overlooked, and those who are first on the ground will have the choice.

There are openings for sawmills, furniture factories, wagon factories, spoke, handle and hub factories, pulp and paper mills, tanners' and dyers' extract plants and plants for making wood acid.

None of the plants of this character in any part of the country can be operated under more favorable conditions than those prevailing along the Clinchfield Route.

Those looking for opportunities to establish profitable plants for manufacturing the many things to be made of wood should examine the offerings along the Clinchfield before making final decisions as to location.



Detailed information will be furnished by the Industrial Department of the road to all those who make inquiry.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

J. J. Champion,
V.-P. and Traffic Manager

R. F. Brewer,
Industrial Agent

Johnson City, Tenn.

Fruit and Tobacco

Exceptional Opportunities in West Virginia

Only within recent years, comparatively speaking, it was found that certain counties in West Virginia possessed the combination of soil and climatic conditions most suitable for the production of apples in the greatest abundance and of the finest quality.

Now the State is an important factor in the apple industry of the country.

Even more recently it was discovered that the chert lands along the summits of the high hills of Hampshire and its neighboring counties, long held to be entirely worthless, could produce peaches not to be surpassed by any soil to be found anywhere in the country.

Now, for two and a half months each autumn, trainloads of peaches daily leave Romney and other stations in West Virginia for the Eastern markets, where they bring top prices.

For years in certain counties in the southwestern part of the State a few farmers raised small patches of tobacco in a desultory way, and only within the last four or five years it came to be realized that in a number of those counties the soil was adapted to the production of the highest grade Burley tobacco.

But once discovered, the fact was put to use, and now the production of Burley tobacco in eight of those counties aggregates something like twenty million pounds annually.

The Baltimore & Ohio Railroad runs through five of these counties, likewise through those that produce the bulk of the apples and peaches grown in West Virginia.

The Baltimore & Ohio puts the growers of apples, peaches and tobacco in close touch with the markets, and enables them to get the highest possible prices for their products.

These same lands and other lands in the same sections are also adaptable to general agricultural purposes—good for grain, grasses, potatoes, truck of all kinds—highly productive under a proper system of intensive farming.

The Industrial Department of this railroad will furnish detailed information to inquirers.

Baltimore & Ohio Railroad

W. W. Wood, Industrial Agent

Baltimore, Md.

Remarkable Results From Intensive Farming

There is no better way of telling what can be done along a certain line of action than by considering what has been done along the same line under like conditions.

Admitting the soundness of this rule, we find that millions of acres of lands now lying waste and useless along the line of the Illinois Central Railroad in Mississippi and Louisiana can be rendered highly productive—providing homes for thousands of prosperous people.

In 1885 the officials of the Illinois Central Railroad, knowing the value of the soil in Tangipahoa Parish, Louisiana, and appreciating the added value of climatic conditions, determined to demonstrate what could be done there by proper cultivation.

Hammond, then a village of a dozen or so families, was chosen as the particular point to which to invite attention, and its advantages of soil and climate were widely advertised among the farmers of the North and West, homeseekers' tickets being sold to such as wished to visit and make personal inspection.

There was not at the time a single carload of farm products being shipped from Tangipahoa Parish—its population was listless and contented with prevailing conditions, the value of its lands unknown.

The changes wrought have astounded those acquainted with conditions as they then were and as they now are.

The parish has changed from a practically barren waste to a community of great activity, a section of high productiveness—a prosperous and progressive section of intensive farming.

In the time that has elapsed—

The population has increased 300 per cent.

Assessed values of property have increased 800 per cent.

There were shipped last year 578 carloads of vegetables and berries against none in 1885.

20,000 acres were planted in strawberries this year.

There was planted last year 50,000 acres of corn on land held worthless in 1885—the crop was hundreds of thousands of bushels against practically nothing.

Dairy farming has proved profitable and brings thousands of dollars into the parish annually where it was thought milch cows could not prosper.

What has been done in one parish can be done in many parishes of Louisiana and many counties of Mississippi.

There are millions of acres in both States only awaiting the coming of the man with the hoe to bring forth prolifically of grains and grasses, of fruits and berries, to the magic of his touch.

There are cut-over lands, bought for the timber and now for sale cheap—wet lands to be drained and brought under cultivation at little outlay, but fertile beyond compare when properly prepared for planting.

They lie along the lines of the Illinois Central Railroad, which brings them in close direct touch with the best markets of the country.

Information
In full
Detail
Will be
Gladly
Furnished

Illinois Central Railroad
Chicago, Ill.

J. C. Clair,
Industrial
and
Immigration
Commissioner,
Chicago, Ill.

Suffolk, Va.—

A Town in Which Manufacturing Pays

There are certain elements entering into the success of practically all lines of manufacturing which, when found in combination in any one place, act almost as a guarantee of profit.

These are cheap raw materials, cheap power, good distributing facilities, and favorable labor conditions.

In the town of Suffolk, Virginia, on the Nansemond River, these conditions meet, and the consequence is that there are in the city more than seventy manufacturing establishments pursuing profitable careers.

The Virginia Railway and Power Company furnishes power to those who use electric-driven motors at prices that are comparatively low, and for those who prefer to generate steam, coal will be furnished at very low prices, being brought directly from the mines of Virginia and West Virginia by railroad lines lying over the most direct routes.

For raw materials there are the forests of Virginia and North Carolina, the ore beds of the two Virginias, the cotton fields of the surrounding counties.

For transportation facilities there are six trunk lines running in and radiating out in all directions, and the Nansemond River, with its line of boats direct to Norfolk harbor and steamship lines running thence to the ports of the world.

For labor, there is the population that has furnished the workers in the factories already in successful operation to guarantee that there shall be no failure for want of hands.

Suffolk already has plants profitably engaged in manufacturing buggies, carriages, wagons, carts, peanut pickers, brick, tile, ice, meal, cigars, marble, machinery, vinegar, carbonated drinks, hosiery, lumber, laths, shingles, barrels, boxes, baskets, crates and hampers for fruits and vegetables; drugs, lumber, flooring, and general inside finishings.

It is believed by those in position to know best that there are good openings for plants that will make brooms, furniture, mattresses, toys, wood novelties, screens, pails and tubs, harness, matches, sash, doors and blinds, shoes, hats, garments for both men and women, tents and awnings, knit goods, fertilizers, cottonseed oil, soap, wire fence, confectionery, butter, peanut products.

Suffolk has two strong banks, both of which pursue a liberal policy with respect to worthy establishments.

Eligible sites can be procured cheaply now—they will cost much more a little later.

Virginia Railway and Power Company

RICHMOND

PETERSBURG

NORFOLK

PORTSMOUTH

SUFFOLK

VIRGINIA

Abrasive Materials.

Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Hall Grindstone Co., Constitution, Ohio.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.

Accountants.

Baltimore Audit Co., Baltimore, Md.
Cruselle Audit Co., Inc., Atlanta, Ga.
Interstate Audit Co., Washington, D. C.
Neville, Chas., Savannah, Ga.

Adding Machines.

Adder Machine Co., Wilkes-Barre, Pa.
Burroughs Adding Machine Co., Detroit, Mich.

Agents. (Manufacturers')

Allen, Herbert F. L., Washington, D. C.

Agricultural Implements.

Myers & Bro., F. E., Ashland, O.

Air Compressors. (Stationary and Portable.)

Allen, Herbert F. L., Washington, D. C.
American Air Compressor Wks., New York, N. Y.
American Compressor & Pump Co., Baltimore, Md.
Blaisdell Machinery Co., Bradford, Pa.
Chicago Pneumatic Tool Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Nagle Corlies Engine Wks., Erie, Pa.
Quincy Engine Co., Quincy, Pa.
Union Steam Pump Co., Battle Creek, Mich.

Air Motors.

Ingersoll-Rand Co., New York, N. Y.

Aluminum Products. (Bars, Sheets, Tubes.)

Aluminum Company of America, Pittsburgh, Pa.

Aluminum Wheels.

Norton Company, Worcester, Mass.

Annealing Boxes.

Wilfong Iron Works Co., Millard F., Phila., Pa.

Anti-Friction Metals.

Bailey-Lebby Co., Charleston, S. C.
Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.
Phosphor-Bronze Smelting Co., Phila., Pa.
Virginia Railway Supply Co., Norfolk, Va.

Anti-Rail Creepers.

Q. & C. Co., New York, N. Y.

Architects.

Cain, Shepherd & Peale, Richmond, Va.
Lockwood, Greene & Co., Boston, Mass.
McLaughlin & Johnson, Lynchburg, Va.
Milburn, Helster & Co., Washington, D. C.
Nichols, Charles H., New York, N. Y.
Pettit, Jr., Chas. Godfrey, Danville, Va.
Sirls, J. E., Greenville, S. C.
Sorey, Norman W., Norfolk, Va.

Architects' Supplies.

Keuffel & Esser, Hoboken, N. J.
Starrett Co., L. S., Athol, Mass.
Weber & Co., F., Philadelphia, Pa.

Architectural Iron and Sheet Metal Work.

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.

Art Glass.

Blaswanger & Co., Memphis, Tenn.

Art Glass and Prisms. (Set in Zinc and Copper.)

Spies Art Glass Co., G. A., St. Louis, Mo.

Asbestos.

Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.

Asphalt.

Armstrong Mfg. Co., Richmond, Va.
Barber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Texas Co., The, New York, N. Y.

Asphalt Melters.

Steubner Iron Wks., G. L., Long Island City, N. Y.

Automobiles. (Motor Trucks.)

International Motor Co., New York, N. Y.

Axles. [See Car Wheels, Axles and Trucks.]**Babbitt Metal. [See Anti-Friction Metal.]****Badges. (Hat and Breast, Electric and Steam Road, Police and Fire Dept.)**

American Railway Supply Co., New York, N. Y.

Bakers' Machinery.

Lynn Superior Co., The, Cincinnati, O.

Bankers and Brokers.

Baltimore Trust Co., Baltimore, Md.
Barr, J. H. C., Philadelphia, Pa.
Delaware Trust Co., Wilmington, Del.
Electric Bond & Share Co., New York, N. Y.
Glenn, W. S., Spartanburg, S. C.
Halsey & Co., N. W., New York, N. Y.
Lisman & Co., F. J., New York, N. Y.
Mercantile Trust & Deposit Co., Baltimore, Md.
New First National Bank, Columbus, O.
Nuveen & Co., John, Chicago, Ill.
Savannah Bank & Trust Co., Savannah, Ga.
Skinner, Clifford R., Philadelphia, Pa.
Southern States Development Co., New York, N. Y.

Banks.

First National Bank, Baltimore, Md.
First Nat'l Bank of Key West, Key West, Fla.
Merchants National Bank, Baltimore, Md.
New First National Bank, Columbus, O.
National Exchange Bank, Baltimore, Md.
Savannah Bank & Trust Co., Savannah, Ga.

Bank and Office Railings and Grilles. (Iron.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chattanooga Iron & Wire Wks., Chat'n'ga, Tenn.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire and Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.

Bank Fixtures.

Ruse & Thompson, Baltimore, Md.

Bar Iron. (Refined and Galvanized.)

Carnegie Steel Co., Pittsburgh, Pa.

Bars, Wire, Wire Fabric, etc. (Steel for Concrete-Steel Construction.)

American Steel & Wire Co., Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Concrete-Steel Co., The, New York, N. Y.
Concrete-Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.

Bearings. (Ball.)

Standard Roller Bearing Co., Philadelphia, Pa.

Bearings. (Brass Journal.)

Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.

Bearings. (Locomotive and Car.)

Keynote Bronze Co., Pittsburgh, Pa.

Bearings. (Oilless.)

North American Metaline Co. (Metaline Co.),
Long Island City, N. Y.

Bearings. (Roller.)

Standard Roller Bearing Co., Philadelphia, Pa.

Bells. (Cast.)

Holtzer-Cabot Electric Co., Boston, Mass.

Bells and Gongs.

National Tube Co., Pittsburgh, Pa.
Western Electric Co., New York, N. Y.

Belted. (Leather, Canvas, Rubber.)

American Supply Co., Providence, R. I.
Bailey-Lebby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Diamond Rubber Co., Akron, O.
Druid Oak Belting Co., Inc., Baltimore, Md.
Gandy Belting Co., Baltimore, Md.
Ladew, Estate Edward R., Glen Cove, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Norwich Belting Co., Norwich, Conn.
Williams & Sons, L. B., Dover, N. H.

Belted. (Chain.)

Bartlett & Snow Co., C. W., Cleveland, O.
Caldwell & Sons Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Morse Chain Co., Ithaca, N. Y.

Belt Conveyors.

Jeffrey Mfg. Co., Columbus, O.
Robins Conveying Belt Co., New York, N. Y.
Taplin-Rice-Clerkin Co., Akron, O.

Belt Dressing.

Diamond Rubber Co., Akron, O.
Gandy Belting Co., Baltimore, Md.
Ladew, Estate Edward R., Glen Cove, N. Y.

Belt Fasteners.

Crescent Belt Fastener Co., New York, N. Y.

Belt Lacing and Supplies. [See Belting, Leather, Canvas, Rubber.]

Bicarbonate Soda. (Sap Stain Lumber Dip.)

Church & Dwight Co., New York, N. Y.

Blackboards. (Slate.)

East Bangor Con. Slate Co., The, East Bangor, Pa.
Hower, J. K., Shilington, Pa.
Johnson, E. J., New York, N. Y.

Block Tackle. (For Wire or Manila Rope.)

Patterson Co., W. W., Pittsburgh, Pa.

Blowers and Exhaust Fans.

American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Mattawan, N. Y.
Raymond Bros. Impact Pulp Co., Chicago, Ill.
Standard Blower & Metal Mfg. Co., Atlanta, Ga.
Sturtevant Co., B. F., Hyde Park, Mass.

Blueprints.

Dixie Blueprint Co., Atlanta, Ga.

Blueprint Apparatus.

Keuffel & Esser, Hoboken, N. J.

Bollers.

Abendroth & Root Mfg. Co., Newburgh, N. Y.
Babcock & Wilcox Co., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., E. D., Newnan, Ga.
Cooper Co., C. & G., Mt. Vernon, O.
Gem City Boiler Co., Dayton, O.
Gibbs Machinery Co., Columbia, S. C.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E. Williamsport, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Oil City Boiler Co., Oil City, Pa.
Petroleum Iron Works, Sharon, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Price Machinery Co., S. M., Norfolk, Va.
Ruemmel-Dawley Mfg. Co., St. Louis, Mo.
Schmidt & Sons Co., J. S., Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Union Iron Works Co., Selma, Ala.
Valk & Murdock Iron Works, Charleston, S. C.
Vogt Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Boiler Tubes. [See Tubes, Boiler.]**Bolts, Nuts, Rivets, Studs and Washers.**

Garland Nut & Rivet Co., Pittsburgh, Pa.
Milton Mfg. Co., Milton, Pa.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.

Bonds. (Surety, etc.)

Fidelity & Deposit Co., Baltimore, Md.

Boring. (Cylinder.)

Richmond Machine Wks., Inc., Richmond, Va.
Strickland Machine Co., Richmond, Va.

Bottling Outfits.

Vilter Mfg. Co., Milwaukee, Wis.

Box Shooks.

Naylor & Co., S. E., Gulfport, Miss.

Brass Goods.

Bailey-Lebby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Kennedy Valve Mfg. Co., Elmira, N. Y.
McKenna Bros. Brass Co., Pittsburgh, Pa.
Powell Co., Wm., Cincinnati, O.
Tratt & Cady Co., Hartford, Conn.

Brazings. (Cast Iron.)

Richmond Machine Works, Inc., Richmond, Va.
Strickland Machine Co., Richmond, Va.

Brass Railings and Grilles, etc.

McKenna Bros. Brass Co., Pittsburgh, Pa.

Brewers' Machinery.

Vilter Mfg. Co., Milwaukee, Wis.

Brick. (Building.)

Am. Enamelled Brick & Tile Co., New York, N. Y.
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Flake & Co., Inc., New York, N. Y.
Hood Brick Co., B. Midlin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Onion Brick & Tile Co., Milledgeville, Ga.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Sibley-Menge Brick & Coal Co., Birmingham, Ala.
Scott Brick Co., Alex. A., Knoxville, Tenn.

Brick. (Blast Furnace, Coke Oven.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Brick. (Enamelled.)

Amer. Enam. Brick & Tile Co., New York, N. Y.

Brick. (Fire Clay.)

Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Flake & Co., Inc., New York, N. Y.
Killian Fire Brick Works, Killian, S. C.
Louisville Fire Brick Works, Highland Park, Ky.
Pomona Terra-Cotta Co., Pomona, N. C.
Stevens' Sons Co., H. Macan, Ga.
Taylor Sons Co., Chas., Cincinnati, O.
Union Mining Co., Mt. Savage, Md.
West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.

Brick. (Paving.)

Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Inglis Shale Brick Co., Birmingham, Ala.
West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.

Brick and Clayworking Machinery and Supplies.

Carnell, George, Philadelphia, Pa.
Fennholtz Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Gallon, O.
Scott-Madden Iron Works, Keokuk, Ia.
Steele & Sons, J. C., Statesville, N. C.
Taplin-Rice-Clerkin Co., Akron, O.

Brick Fireplaces. [See Fireplaces, Artistic Brick.]**Brickwork. (Artistic.)**

Flake & Co., Inc., New York, N. Y.

Bridges. (Concrete.)

Concrete Steel Engineering Co., New York, N. Y.
Roanoke Bridge Co., Inc., Roanoke, Va.

Bridges. (Rolling Lift.)

Scherzer Rolling Lift Bridge Co., Chicago, Ill.

Bridges.

American Bridge Co. of New York, New York.
Brimont Iron Works, Philadelphia, Pa.
Clampson Bridge Co., Wilmington, Ohio.
Des Moines Bridge & Iron Co., Pittsburgh, Pa.
Farris Bridge Co., Pittsburgh, Pa.
Memphis Bridge Co., Memphis, Tenn.
Roanoke Bridge Co., Inc., Roanoke, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
York Bridge Co., York, Pa.

Bridge and Structural Iron Paints.

Chattanooga Paint Co., Chattanooga, Tenn.
Dixon Crucible Co., Joseph, Jersey City, N. J.
Standard Paint Co., New York, N. Y.

Brimstone.

Union Sulphur Co., New York, N. Y.

Buckets. (Excavators.)

Bird Iron Works, Reading, Pa.
Hayward Co., New York, N. Y.
Mouhgan Mch. Co., Chicago, Ill.
Steubner Iron Works, G. L., Long Island City, New York, N. Y.
Williams Co., The G. H., Cleveland, O.

Buckets. (Ore, etc.)

Bird Iron Works, Reading, Pa.
Brown Hoisting Mch. Co., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Smith Co., T. L., Atlanta, Ga.
Williams Co., The G. H., Cleveland, O.

Buhr Stones.

Starr Co., B. F., Baltimore, Md.

Builders and Contractors.

Falls City Construction Co., Louisville, Ky.
Farris Bridge Co., Pittsburgh, Pa.
Ferro Concrete Construction Co., Cincinnati, O.
Selden-Breck Construction Co., St. Louis, Mo.
Unit Construction Co., St. Louis, Mo.
White & Co., J. G., New York, N. Y.

Buildings. (Financed and Erected.)

Falls City Construction Co., Louisville, Ky.
Gulf Coast Construction Co., Houston, Tex.

Building Supplies.

Armstrong Mfg. Co., Richmond, Va.
Chicago House Wrecking Co., Chicago, Ill.
Norfolk Building Supplies Corp., Norfolk, Va.
Southern Building Material Co., Norfolk, Va.

Burners. (Oil.) [See Fuel Oil Equipments.]**Bushings. (Oilless, for Loose Pullers.)**

North American Metaline Co. (Metaline Co.),
Long Island City, N. Y.

Cables.

American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebeling's Sons Co., John A., Trenton, N. J.
Williamsport Wire Rope Co., Williamsport, Pa.

Cableways. (Overhead Suspension.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Flory Mfg. Co., S., Bangor, Pa.
International Cable Railway Co., Baltimore, Md.
Lidgerwood Mfg. Co., New York, N. Y.
Mead-Morrison Mfg. Co., Cambridge, Mass.
Roebeling's Sons Co., John A., Trenton, N. J.

Can and Box Making Machinery. (Tia.)

Bilas Co., E. W., Brooklyn, N. Y.

Cans.

New Orleans Rfg. & Metal Wks., New Orleans, La.
Southern Can Co., Baltimore, Md.

Canning Machinery and Supplies.

Robins & Co., A. K., Baltimore, Md.
Schnitz-Scott Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.

Carborundum Paper and Cloth.

Carborundum Co., Niagara Falls, N. Y.

Card Clothing.

American Supply Co., Providence, R. I.

Cars. (Dump, Industrial, Logging and Mine.)

Austin Mfg. Co., Chicago, Ill.
Baldwin Equipment & Supply Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, Ohio.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., C. W., West New Brighton, N. Y.
Jules Co., Cincinnati, O.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Raleigh Iron Works Co., Raleigh, N. C.
Smith Co., T. L., Atlanta, Ga.
Steubner Iron Wks., G. L., Long Island City, N. Y.
Union Iron Works, Selma, Ala.
Western Wheeled Scraper Co., Aurora, Ill.

Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**Car Couplers and Knuckles.**

Safety Car H't'g & L'ght'g Co., New York, N. Y.

Car Lighting and Heating.

Safety Car H't'g & L'ght'g Co., New York, N. Y.

Car Wheels, Axles and Trucks.

Carnegie Steel Co., Pittsburgh, Pa.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Union Iron Works, Selma, Ala.

Castings. (Aluminum.)

Aluminum Company of America, Pittsburgh, Pa.

Castings. (Brass and Bronze.)

Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.
Keystone Bronze Co., Pittsburgh, Pa.
Phosphor-Bronze Smelting Co., Phila., Pa.
Richmond Machine Works, Inc., Richmond, Va.
Stratton & Bragg Co., Petersburg, Va.
Triumph Electric Co., Cincinnati, O.

Castings. (Iron, Gray, etc.)

Columbian Iron Works, Chattanooga, Tenn.
Georgia Car & Locomotive Co., Atlanta, Ga.
Glanorgan Pipe & Foundry Co., Lynchburg, Va.
McWane Pipe Works, Lynchburg, Va.
Roanoke Iron Works, Inc., Roanoke, Va.
Robins Conveying Belt Co., New York, N. Y.
Stratton & Bragg Co., Petersburg, Va.
U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.
Valk & Murdock Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.

Castings. (Malleable Iron and Steel.)

Acme Steel & Malleable Iron Wks., Buffalo, N. Y.
Missouri Malleable Iron Co., East St. Louis, Ill.

Castings. (Steel.)

Acme Steel & Malleable Iron Wks., Buffalo, N. Y.
Crucible Steel Castings Co., Laundowne, Pa.
Hoffman & Co., H. C., Baltimore, Md.
Heliace Steel Casting Co., Pittsburgh, Pa.

Ceilings. (Metal.)

Chattanooga Rfg. & Fdy. Co., Chattanooga, Tenn.
Edwards Manufacturing Co., Cincinnati, O.
Harry Steel Co., O. K., St. Louis, Mo.
Releigh Metal Co. & Mfg. Co., S. Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.

Cement.</

- Clocks. (Watchman.)**
Holmer-Cabot Electric Co., Boston, Mass.
Kaiser, Louis E., Baltimore, Md.
- Coal.**
Alabama Coal & Iron Co., Birmingham, Ala.
Cincinnati Coal Corp., Dante, Va.
Cincinnati Fuel Co., Spartanburg, S. C.
Consolidation Coal Co., Inc., New York, N. Y.
Flat Top Fuel Co., Bluefield, W. Va.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Tennessee Coal, Iron & R. R. Co., B'ingh'm, Ala.
- Coal Cutters.**
Ingersoll-Rand Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
- Coal Handling Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Brown Hoisting Mch. Co., Cleveland, O.
Hayward Co., New York, N. Y.
Hunt Co., C. W., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nictown (Philadelphia), Pa.
Mead-Morrison Mfg. Co., Cambridge, Mass.
Robbins Conveying Belt Co., New York, N. Y.
Williams Co., The G. H., Cleveland, O.
- Coal Tar and By-Products.**
Barrett Mfg. Co., Philadelphia, Pa.
- Coke.**
Alabama Coal & Iron Co., Birmingham, Ala.
Flat Top Fuel Co., Bluefield, W. Va.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Tennessee Coal, Iron & R. R. Co., B'ingh'm, Ala.
- Concrete Construction. (Steel Reinforcement.)**
American Steel & Wire Co., Chicago, Ill.
Brown Hoisting Machinery Co., Cleveland, O.
Concrete Steel Co., The, New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Ferro Concrete Construction Co., Cincinnati, O.
Foster-Craighead & Co., Nashville, Tenn.
Jeffrey Mfg. Co., Columbus, O.
Rebert Mfg. Co., Milwaukee, Wis.
Specialty Eng. Co., Houston, Tex.
Tait Construction Co., St. Louis, Mo.
- Concrete Curb Protection. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Dams.**
Amburn Hydraulic Const. Co., Boston, Mass.
Hydraulic Properties Co., New York, N. Y.
- Concrete Forms. (Metal.)**
Rebert Mfg. Co., Milwaukee, Wis.
- Concrete Mixers.**
Jeffrey Mfg. Co., Columbus, O.
Marshall Mfg. Co., Chicago, Ill.
Smith Co., T. L., Atlanta, Ga.
Standard Scale & Supply Co., Pittsburgh, Pa.
Troy, W. R., Jr., Memphis, Tenn.
- Concrete Pile. (Corrugated.)**
The Underground Const. Co., St. Louis, Mo.
- Concrete Reinforcing Bars.**
Carnegie Steel Co., Pittsburgh, Pa.
Concrete Steel Co., The, New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
- Concrete Ties.**
Universal Concrete Tie Co., New Orleans, La.
- Condensers.**
Albergh Condenser Co., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Westinghouse Machine Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.
- Conductor Pipe.**
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Contractors. (Diamond Drill.)**
Ameling Prospecting Co., H. R., St. Louis, Mo.
- Contractors. (Hydro-Electric Developments.)**
Multiple Arch Hyd. Cons. Co., Spartanburg, S. C.
- Contractors' Machinery and Supplies. [See also Hoisting Machinery.]**
American Engineering Co., Philadelphia, Pa.
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., Inc., J. I., Racine, Wis.
Clyde Iron Works, Duluth, Minn.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Exeter Machine Works, Pittsburg, Pa.
Hyde Bros. & Co., S. Bangor, Pa.
Ingersoll-Rand Co., New York, N. Y.
Males Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Maryland Equipment & Supply Co., Baltimore, Md.
Mead-Morrison Mfg. Co., Cambridge, Mass.
Monaghan Mch. Co., Chicago, Ill.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Pipe & Contractors' Supply Co., New York, N. Y.
Robbins Conveying Belt Co., New York, N. Y.
Smith Co., T. L., Atlanta, Ga.
Steubner, Iron Works, G. L., Long Island City, New York, N. Y.
Troy, W. R., Jr., Memphis, Tenn.
- Conveying Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Brown Hoisting Mch. Co., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Flory Mfg. Co., S. Bangor, Pa.
Hayward Co., New York, N. Y.
Hunt Co., C. W., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
Mead-Morrison Mfg. Co., Cambridge, Mass.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Robbins Conveying Belt Co., New York, N. Y.
Tappin-Rice-Clerkin Co., Akron, O.
- Cooling Towers.**
Albergh Condenser Co., New York, N. Y.
Bennett-Dawley Mfg. Co., St. Louis, Mo.
- Cordage.**
American Mfg. Co., New York, N. Y.
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
International Cotton Mills Corp., New York, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
- Cooperage Stock and Box Shook Machinery.**
Peter Gerlach Co., Cleveland, O.
- Core Drilling. (Contractors.)**
Ameling Prospecting Co., H. R., St. Louis, Mo.
- Cordage Machinery.**
Haskell-Dawes Machinery Co., Boston, Mass.
- Corn-Mill Machinery.**
Nurdyke & Marmon Co., Indianapolis, Ind.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.
- Cotton Duck.**
International Cotton Mills Corp., New York, N. Y.
- Cotton Oil and Products.**
American Cotton Oil Co., New York, N. Y.
- Cotton Yarns. (Commission Merchants.)**
Paulson, Linkroum & Co., New York, N. Y.
- Cotton-Gin Machinery.**
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Gibbs Machinery Co., Columbia, S. C.
- Cotton-Mill Machinery.**
American Mach. & Mfg. Co., Charlotte, N. C.
American Supply Co., Providence, R. I.
Draper Co., Hopedale, Mass.
Kitsen Machine Shop, Lowell, Mass.
Lowell Machine Shop, Lowell, Mass.
Mason Machine Works, Tauton, Mass.
Saco-Pettie Co., Newton Upper Falls, Mass.
Whitins Machine Works, Whitinsville, Mass.
Whitinsville Sping' Ring Co., Whitinsville, Mass.
- Cotton-Mill Supplies.**
American Supply Co., Providence, R. I.
Whitinsville Sping' Ring Co., Whitinsville, Mass.
- Cottonseed-Oil Machinery.**
Buckeye Iron & Brass Works, Dayton, O.
Burruss Engineering Co., Atlanta, Ga.
Callahan Co., W. F., Dayton, O.
Cardwell Machine Co., Richmond, Va.
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Couplings.**
American Spiral Pipe Works, Chicago, Ill.
Brown Co., A. & F., New York, N. Y.
Caldwell & Son Co., Inc., W. E., Louisville, Ky.
Golden's Foundry & Machine Co., Columbus, Ga.
Patt & Cady Co., Hartford, Conn.
Shelair Scott Co., Baltimore, Md.
Wood's Sons, T. B., Chambersburg, Pa.
- Couplings. (Car.)**
Weimer Chain & Iron Co., Lebanon, Pa.
- Couplings. (Hose, Air, Gas, Steam and Water.)**
National Tube Co., Pittsburgh, Pa.
- Coverings. (Pipe, Boiler, etc.)**
Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.
- Cowls.**
Pullman Auto. Ventilator Mfg. Co., York, Pa.
- Cranes. (Locomotive.)**
American Hoist & Derrick Co., St. Paul, Minn.
Brown Hoisting Machinery Co., Cleveland, O.
Exeter Machine Works, Pittsburg, Pa.
Ohio Locomotive Crane Co., Bucyrus, O.
- Cranes. (Traveling, Hand, Power, Hydraulic.)**
Brown Hoisting Machinery Co., Cleveland, O.
Hayward Co., New York, N. Y.
Lane Mfg. Co., Montpelier, Vt.
Northern Engineering Works, Detroit, Mich.
Speidel, J. G., Reading, Pa.
- Crayons.**
Lowell Crayon Co., Lowell, Mass.
- Crematories. (Garbage.)**
Specialty Eng. Co., Houston, Tex.
- Crescoted Wood Block. (Contractors for Laying.)**
Crescoted Wood Block Pav. Co., New Orleans, La.
- Crescoting Works.**
Gulfport Crescoting Co., Gulfport, Miss.
Internat'l Crescoting & Cons. Co., Galveston, Tex.
National Lumber & Cresc. Co., Texarkana, Ark.
Southern Crescoting Co., Ltd., Silldell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crossarms and Pins.**
Electrical Engineering & Contracting Co., Raleigh, N. C.
- Internat'l Crescoting & Cons. Co., Galveston, Tex.**
Southern Crescoting Co., Ltd., Silldell, La.
Western Electric Co., New York, N. Y.
- Crossings. (See Railroad Frogs and Switches.)**
- Crosstie Machine.**
Standard Cross Tie Mch. Co., New Orleans, La.
- Crossties. (Crescoting.)**
Internat'l Crescoting & Cons. Co., Galveston, Tex.
National Lumber & Cresc. Co., Texarkana, Ark.
Naylor & Co., S. E., Gulfport, Miss.
Southern Crescoting Co., Ltd., Silldell, La.
- Crossties. (Reinforced Concrete.)**
Universal Concrete Tie Co., New Orleans, La.
- Crossties. (Steel.)**
Carnegie Steel Co., Pittsburgh, Pa.
- Crushers. (Corn and Cob.)**
Gardner Crusher Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
- Crushers. (Rock.)**
American Pulverizer Co., St. Louis, Mo.
Austin Mfg. Co., Chicago, Ill.
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
Cresson Co., Geo. V., Philadelphia, Pa.
Gardner Crusher Co., New York, N. Y.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Smith Co., T. L., Atlanta, Ga.
Troy, W. R., Jr., Memphis, Tenn.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
- Crushing and Pulverizing Machinery.**
Alsing Engineering Co., J. R., New York, N. Y.
American Pulverizer Co., St. Louis, Mo.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., C. O., Cleveland, O.
Cresson Co., Geo. V., Philadelphia, Pa.
Gardner Crusher Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Power & Mining Machinery Co., Cudahy, Wis.
Pratt Engineering & Mach. Co., Atlanta, Ga.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Tappin-Rice-Clerkin Co., Akron, O.
Walker & Elliott, Wilmington, Del.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
Western Wheel Scraper Co., Aurora, Ill.
- Culverts. (Corrugated Metal.)**
American Rolling Mill Co., Middletown, O.
Canton Culvert Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Harry Bros. Co., Newport, Ky.
Harry Steel Co., O. K., St. Louis, Mo.
Kentucky Culvert Mfg. Co., Buchel, Ky.
New Orleans Rfr. & Metal Wks., New Orleans, La.
North Carolina Metal Culv. Co., Greensboro, N. C.
Roanoke Bridge Co., Roanoke, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Inc., Roanoke, Va.
- Culverts. (Vitrified Pipe.)**
Bibb Sewer Pipe Co., Macon, Ga.
Stevens Sower Co., H., Macon, Ga.
- Cupola Furnaces.**
Northern Engineering Works, Detroit, Mich.
Paxson Co., J. W., Philadelphia, Pa.
Petroleum Iron Works Co., Sharon, Pa.
- Custom House Brokers.**
Howard & Co., Savannah, Ga.
- Cuts. (Half-tone, Line, etc.)**
Baltimore Maryland Envg. Co., Baltimore, Md.
- Cutter Heads. (Woodworking.)**
Shlumer & Sons, Samuel J., Milton, Pa.
- Cutter Grinders.**
Abrasive Material Co., Philadelphia, Pa.
Vitrified Wheel Co., Westfield, Mass.
- Dams. (Multiple Arch Masonry.)**
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.
- Dams. (Reinforced Concrete.)**
Amburn Hydraulic Const. Co., Boston, Mass.
Hydraulic Properties Co., New York, N. Y.
- Derricks and Derrick Fittings.**
American Hoist & Derrick Co., St. Paul, Minn.
Monaghan Machine Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Yorker Derrick Co., Washington, Pa.
- Designers and Illustrators. (Printed Matter.)**
Baltimore Maryland Envg. Co., Baltimore, Md.
- Ditching Machinery.**
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Marion-Osgood Co., Marion, O.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Williams Co., The G. H., Cleveland, O.
- Doors. (Birch Veneered.)**
Massee & Felton Lumber Co., Macon, Ga.
- Doors. (Steel Rolling.)**
Kinneer Mfg. Co., Columbus, O.
- Doors. (Tin Clad.)**
Victor Mfg. Co., Newburyport, Mass.
- Doors, Partitions. (Metallic.)**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
- Doors, Sash and Blinds.**
Columbus Iron Works Co., Columbus, Ga.
Massee & Felton Lumber Co., Macon, Ga.
Norfolk Building Supplies Corp., Norfolk, Va.
- Draftsmen's Supplies.**
Keuffel & Esser, Hoboken, N. J.
Weber & Co., F., Philadelphia, Pa.
- Dredge Chains.**
Standard Chain Co., Pittsburgh, Pa.
Weimer Chain & Iron Co., Lebanon, Pa.
- Dredge Cutters.**
Norborn Engineering Co., Philadelphia, Pa.
- Dredges. [See Excavating Machinery.]**
- Drills. (Pneumatic.) [See also Drills, Rock and Mining.]**
Drills. (Prospecting.)
Fort Wayne Electric Works, Madison, Wis.
Ingersoll-Rand Co., New York, N. Y.
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
- Drills. (Rock and Mining.)**
Chicago Pneumatic Tool Co., Chicago, Ill.
Fort Wayne Electric Works, Madison, Wis.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Wickes Bros., Jersey City, N. J.
- Drills. (Twist.)**
Manning, Maxwell & Moore, Inc., New York, N. Y.
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Drive Well Points and Well Supplies.**
National Tube Co., Pittsburgh, Pa.
- Drop Forgings.**
American Spiral Pipe Works, Chicago, Ill.
- Drop Forging Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
- Drying Machinery.**
American Blower Co., Detroit, Mich.
American Process Co., New York, N. Y.
Bailey-Leiby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Ruggles-Coles Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Drykilns.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Union Iron Works Co., Selma, Ala.
- Dumbwaiters.**
Hollister-Whitney Co., Quincy, Ill.
Sidney Elevator & Mfg. Co., Sidney, O.
Speidel, J. G., Reading, Pa.
- Dump Wagons and Wagon Boxes.**
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
Eagle Wagon Works, Auburn, N. Y.
Troy Wagon Works Co., Troy, O.
- Dust-Collecting Systems.**
Buffalo Forge Co., Buffalo, N. Y.
King Co., F. E., Norfolk, Va.
Standard Blower & Metal Mfg. Co., Atlanta, Ga.
- Dynamite.**
du Pont de Nemours Powder Co., E. I., Wilmington, Del.
- Dynamometers and Motors. (Steam Turbine.)**
De Laval Steam Turbine Co., Trenton, N. J.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Southwark Fdry. & Mch. Co., Philadelphia, Pa.
Terry Steam Turbine Co., New York, N. Y.
Western Electric Co., New York, N. Y.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Eaves. (Trough.)**
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Ejectors. (Auto. Sewage.)**
Blaisdell Machinery Co., Bradford, Pa.
- Electric Machinery. (Dynamometers, Generators, Motors, etc.)**
Allis-Chalmers Co., Milwaukee, Wis.
American Engine Co., Bound Brook, N. J.
American Machine Co., Louisville, Ky.
Crocket-Wheeler Co., Amper, N. J.
Fairbanks, Morse & Co., Chicago, Ill.
- Fort Wayne Electric Works, Fort Wayne, Ind.**
General Electric Co., Schenectady, N. Y.
Gregory Electric Co., Chicago, Ill.
Heer Engine Co., Portsmouth, Ohio.
Kentucky Electrical Co., Inc., Owensboro, Ky.
Kilbuck, H., Pittsburgh, Pa.
Lee Electric Co., Baltimore, Md.
Miller-Owen Elec. Co., Pittsburgh, Pa.
Piedmont Electric Co., Asheville, N. C.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Robbins & Myers Co., Springfield, O.
Southwark Fdry. & Mch. Co., Philadelphia, Pa.
Sturtevant Co., B. F., Hyde Park, Mass.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Electrical Contractors, Instruments and Supplies.**
American Mach. & Mfg. Co., Charlotte, N. C.
Crocket-Wheeler Co., Amper, N. J.
Electrical Engineers' Equip. Co., Chicago, Ill.
Engberg's Elec. & Mch. Wks., St. Joseph, Mich.
Fort Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Gregory Electric Co., Chicago, Ill.
Johns-Manville Co., H. W., New York, N. Y.
Kentucky Electrical Co., Inc., Owensboro, Ky.
Lee Electric Co., Baltimore, Md.
Levy, Demoda, Columbus, Ga.
Neville, Wm. H., New Orleans, La.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Electrical Power-House Supplies.**
Electrical Engineers' Equip. Co., Chicago, Ill.
- Electro Magnet. [See Magnet Electro.]**
- Elevating, Conveying and Power Transmission Machinery. [See also Conveying Mch. and Power Transmission Mch.]**
Jeffrey Mfg. Co., Columbus, O.
- Elevators.**
Albro-Clem Elevator Co., Philadelphia, Pa.
American Machine Co., Louisville, Ky.
Curran Elevator Co., James H., Cincinnati, O.
Hollister-Whitney Co., Quincy, Ill.
Kansas City Elevator Mfg. Co., Kansas City, Mo.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, O.
Otis Elevator Co., New York, N. Y.
Sidney Elevator & Mfg. Co., Sidney, O.
Speidel, J. G., Reading, Pa.
Warsaw Elevator Co., Baltimore, Md.
Westbrook Elevator Co., Danville, Va.
- Elevator Safety Appliances.**
Roth Elevator Safety Co., Inc., Baltimore, Md.
- Elevator Buckets.**
Caldwell & Son Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co. (Nictown), Philadelphia, Pa.
- Elevator Enclosures and Cabs.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire and Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., The Fred J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
Otis Elevator Co., New York, N. Y.
Southern Wire and Iron Mfg. Co., Dallas, Tex.
- Elevator Rope. [See Wire Rope.]**
- Elevator Safety Gates.**
Richmond Safety Gate Co., Richmond, Ind.
- Emery Wheels. [See Grinding Wheels.]**
- Engineers—CONSULTING.**
Angle, Geo. W., New York, N. Y.
Barstow & Co., W. S., New York, N. Y.
Fols, F. Julius, Lexington, Ky.
Fuller-Coul Co., St. Louis, Mo.
Graham, Edgar M., Muskogee, Okla.
Hill, Norman A., Baltimore, Md.
Jaudon Engineering Co., H. S., Savannah, Ga.
Lawrence, James C., Memphis, Tenn.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
Macfarren, S. J., Washington, D. C.
Myers & Co., Ernest L., Dallas, Tex.
Nichols, Charles H., New York, N. Y.
Payne, Jas. H., Yorktown, Va.
Quick, Alfred M., Baltimore, Md.
Western Engineering Co., Oklahoma City, Okla.
- DESIGNING—CONSTRUCTING.**
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Assets Realization Co., Chicago, Ill.

Lockers. (Metal.)
Kelghley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

Locomotives.
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Byers Machine Co., John F., Ravenna, O.
Climax Mfg. Co., Corry, Pa.
Davenport Locomotive Works, Davenport, Ia.
Helsler Locomotive Works, Erie, Pa.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive & Machine Co., Lima, O.
Males Co., Cincinnati, O.
Porter Co., H. K., Pittsburgh, Pa.
Vulcan Iron Works, Wilkes-Barre, Pa.

RAILWAY.
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Lima Locomotive & Machine Co., Lima, O.
Males Co., Cincinnati, O.
Southern Supply Co., Norfolk, Va.

Looms and Weaving Machinery.
Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.

Lubricants.
Albany Lubricating Co., New York, N. Y.
Chester Graphite Co., Chester Springs, Pa.

Lumber.
Industrial Lumber Co., Elizabeth, La.
Massey & Felton Lumber Co., Macon, Ga.

Lumber. (Heavy Construction, Pitch Pine, etc.)
Massey & Felton Lumber Co., Macon, Ga.
National Lumber & Creosote Co., Texarkana, Ark.
Naylor & Co., S. E., Gulfport, Miss.

Lumber. (Yellow Pine.)
Industrial Lumber Co., Elizabeth, La.

Lumber Buggies.
Sole Steam Feed Works, Meridian, Miss.

Lumber Stackers.
Sole Steam Feed Works, Meridian, Miss.

Machinery. (Special.)
Baltimore Machine Works, Baltimore, Md.
Bliss Co., E. W., Brooklyn, N. Y.
Kline, Lewis T., Alpena, Mich.
Lester & Co., Charles, Brooklyn, N. Y.
Old City Boiler Co., Old City, Pa.
Rogersford Fdry. & Mach. Wks., Rogersford, Pa.
Stratton & Bragg Co., Petersburg, Va.
Universal Telegraphic Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)
Boston Iron & Metal Co., Baltimore, Md.
Chicago House Wrecking Co., Chicago, Ill.
Cleveland Belting & Machinery Co., Cleveland, O.
Donner Railway Equipment Co., Chicago, Ill.
Duxet & Son, New York, N. Y.
Grand Machine & Tool Co., Philadelphia, Pa.
Hittner's Sons Co., Henry A., Philadelphia, Pa.
Hyde Bros. & Co., Pittsburgh, Pa.
Kleinhaus, H., Pittsburgh, Pa.
Lehman, Charles T., Birmingham, Ala.
Levene & Co., E., Philadelphia, Pa.
Lodge & Shipley Machine Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Mathies Iron & Metal Co., G., St. Louis, Mo.
Pannanuel Engineering Co., Chicago, Ill.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Pipe & Contractors Supply Co., New York, N. Y.
Pittsburgh Mach. & Equip. Co., Pittsburgh, Pa.
Preston Tool & Supply Co., New York, N. Y.
Randle Machinery Co., Cincinnati, O.
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Samuel, Frank, Philadelphia, Pa.
Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
South Side Fdry. & Mach. Co., Charleston, W. Va.
Southern Supply Co., Norfolk, Va.
Tampa Machinery Exchange, Tampa, Fla.
Tosney Supply Co., Beaumont, Tex.
Toomey, Frank, Philadelphia, Pa.
Waterloo Co., Herman L., Philadelphia, Pa.
Yarley, Thomas, Philadelphia, Pa.

Machine Tools.
Greaves, Kinsman & Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
Stephens Shaper Co., John, Cincinnati, O.

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American Mach. & Mfg. Co., Charlotte, N. C.
Roanoke Iron Works, Inc., Roanoke, Va.
Stratton & Bragg Co., Petersburg, Va.
Universal Telegraphic Co., Baltimore, Md.

Magnesia Materials.
Johns-Manville Co., H. W., New York, N. Y.

Magnet Electro. (For Cottonseed, Linters and Hullers.)
Dixie Electro Magnet Co., Memphis, Tenn.

Magnetic Separators.
Paxson Co., J. W., Philadelphia, Pa.

Mail Chutes.
Cutler Mail Chute Co., Rochester, N. Y.

Mantels. (Wooden.)
Northross Mantel Co., W. J., Memphis, Tenn.

Marble Work. (Interior.)
Dagostin & Angelini Bros., Montgomery, Ala.

Masonry Dams.
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.

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American Blower Co., Detroit, Mich.
Buffalo Steam Pump Co., Buffalo, N. Y.
Richmond Engr. & Mfg. Co., Richmond, Va.
Sturtevant Co., B. F., Hyde Park, Mass.

Metal Ceilings. [See Ceilings, Metal.]

Metaline.
North American Metaline Co. (Metaline Co.), Long Island City, N. Y.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Metal Polish.
Hoffman Co., Geo. W., Indianapolis, Ind.

Metal Shingles.
Burris & Co., John T., Anderson, S. C.
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Manufacturing Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.

Metal Stamping.
Parsons Specialty & Mch. Co., Philadelphia, Pa.

Metal Window Frames and Sashes.
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The, Cincinnati, O.
Kelghley Met. Cell. Mfg. Co., S., Pittsburgh, Pa.
Voigtmann & Co., Chicago, Ill.

Metal Work. (Stamped and Embossed Hotel Clocks, Key Tags, etc.)
American Railway Supply Co., New York, N. Y.

Metal-Working Machinery.
Bertsch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Lester & Co., Charles, Brooklyn, N. Y.
Long & Althatter Co., Hamilton, O.
Rogersford Fdry. & Mach. Co., Rogersford, Pa.
Stoll Co., D. H., Buffalo, N. Y.

Micrometers, Calipers, etc.
Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)
International Filter Co., Chicago, Ill.

Mill Engineers and Architects.
Lockwood, Greene & Co., Boston, Mass.
Sirrnie, J. E., Greenville, S. C.

Mill Supplies.
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Lindsay, J. L., Inc., Richmond, Va.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Inc., New York, N. Y.
Nortyke & Marmon Co., Indianapolis, Ind.
Reuter-Jones Mfg. Co., St. Louis, Mo.
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Smith-Courtney Co., Richmond, Va.
Starr Co., B. F., Baltimore, Md.
Stratton & Bragg Co., Petersburg, Va.
Wolf Co., Chambersburg, Pa.

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Jeffrey Mfg. Co., Columbus, O.
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Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

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Smith Co., T. L., Atlanta, Ga.

Mixing Machinery.
Dunning, W. D., Syracuse, N. Y.
Lynn-Superior Co., The, Cincinnati, O.

Mortar Colors.
Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks.
International Motor Co., New York, N. Y.

Mouldings, Casings, etc.
Massey & Felton Lumber Co., Macon, Ga.

Nails. (Cut.)
La Belle Iron Works, Steubenville, O.

Nails and Spikes.
American Steel & Wire Co., Chicago, Ill.
Republic Iron & Steel Co., Youngstown, O.
Youngstown Sheet & Tube Co., Youngstown, O.

Nitre Pots, Eggs.
Pratt Engineering & Mach. Co., Atlanta, Ga.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Nut Locks. (Railroad.)
Universal Nut & Bolt Lock Co., Newport, Ky.

Office Furniture.
Ruse & Thompson, Baltimore, Md.

Oils. (Lubricating, etc.)
Albany Lubricating Co., New York, N. Y.
Borne-Schrymer Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.
Texas Co., The, New York, N. Y.

Oil-Burning Appliances.
Petroleum Iron Works Co., Sharon, Pa.

Oil Cans.
Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]

Oil Separators.
Stewart Heater Co., Buffalo, N. Y.

Oil Stones.
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.

Oil-Well Machinery.
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.

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Belmont Iron Works, Philadelphia, Pa.
Belmont Iron & Wire Works, J. E., Detroit, Mich.
Chattanooga Iron & Wire Wks., Chattanooga, Tenn.
Chesapeake Iron Works, Baltimore, Md.
Dow Wire and Iron Works, Louisville, Ky.
Clio Elevator & Machine Co., The, Columbus, O.
Roanoke Iron Works, Inc., Roanoke, Va.
Schreiber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Southern Wire & Iron Mfg. Co., Dallas, Tex.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.
International Oxygen Co., New York, N. Y.

Oxygen.
International Oxygen Co., New York, N. Y.

Packing. (Asbestos, Metallic, Rubber, Leather, etc.)
Jenkins Bros., New York, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Power Specialty Co., New York, N. Y.

Paint. (Bridge.)
Dixon Crucible Co., Jos., Jersey City, N. J.
National Roofing Co., Tonawanda, N. Y.

Paint. (Metal Preservative.)
National Roofing Co., Tonawanda, N. Y.

Paint. (Roofing, Building, etc.)
Armstrong Mfg. Co., The, Richmond, Va.
Cameron & Barkley Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Dixon Crucible Co., Jos., Jersey City, N. J.
National Roofing Co., Tonawanda, N. Y.
Standard Paint Co., New York, N. Y.
Thompson & Co., Pittsburgh, Pa.

Painting. (Contractors for Bridges, Buildings, etc.)
Dinace & Bro., A., Pittsburgh, Pa.

Paint-Making Machinery.
Lynn Superior Co., The, Cincinnati, O.

Paper. (Roofing, Building, Sheeting, etc.)
Armstrong Mfg. Co., Richmond, Va.
Barrett Mfg. Co., Philadelphia, Pa.
Berlin Mills Co., Portland, Maine.
Cameron & Barkley Co., Charleston, S. C.

Paper. (Wrapping.)
Berlin Mills Co., Portland, Maine.

Patent Attorneys.
Brown, Eugene C., Washington, D. C.
Chandler & Chandler, Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Jones, Bennett S., Washington, D. C.

Patterns.
Roanoke Iron Works, Inc., Roanoke, Va.

Pavement Filler.
Barrett Mfg. Co., Philadelphia, Pa.

Paving. (Contractors for Creosoted Wood Block.)
Creosoted Wood Block Pav. Co., New Orleans, La.

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Gulfport Creosoting Co., Gulfport, Miss.
Southern Wood Preserving Co., Atlanta, Ga.
U. S. Wood Preserving Co., New York, N. Y.

Paving Brick.
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Luglis Shale Brick Co., Birmingham, Ala.

Paving Machines. (Bituminous Materials.)
Smith Co., T. L., Atlanta, Ga.

Perforated Metal.
Caldwell & Son, H. W., Chicago, Ill.
Cross Engineering Co., Carbondale, Pa.
Erdle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., The, Carbondale, Pa.
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Perspectives. (Water Color, for Architects.)
Alger & Smith, Atlanta, Ga.

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Gulf Refining Co., Pittsburgh, Pa.
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Standard Oil Co., Inc., Newark, N. J.

Phosphate Machinery.
Aising Engineering Co., J. R., New York, N. Y.
American Process Co., New York, N. Y.
Bailey-Lebby Co., The, Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Link-Belt Co., Nicetown (Philadelphia), Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Pratt Engineering & Mach. Co., Atlanta, Ga.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Valk & Murdoch Iron Works, Charleston, S. C.
Walker & Elliott, Wilmington, Del.

Phosphor-Bronze. (Wire Rods, Sheets.)
Phosphor-Bronze Smelting Co., Philadelphia, Pa.

Photo-Engravers.
Baltimore-Maryland Engr. Co., Baltimore, Md.

Pig Iron.
Alabama Coal & Iron Co., Birmingham, Ala.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., B'ham, Ala.

Pile Drivers.
Bueyrus Co., South Milwaukee, Wis.
Vulcan Iron Works, Chicago, Ill.

Piling. (Creosoted.)
Gulfport Creosoting Co., Gulfport, Miss.
Intern'l Creosoting & Const. Co., Galveston, Tex.
Southern Creosoting Co., Ltd., Sildell, La.

Pillow Blocks.
Caldwell Co., Inc., W. E., Louisville, Ky.
Golden's Foundry & Machine Co., Columbus, Ga.

Pipe. (Cast Iron.)
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
McWane Pipe Works, Lynchburg, Va.
F. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.

Pipe. (Cdl.)
Columbus Iron Works Co., Columbus, Ga.
Frick Co., The, Wyncosho, Pa.
National Pipe Bending Co., New Haven, Conn.
Whitlock Coll Pipe Co., Hartford, Conn.
York Mfg. Co., York, Pa.

Pipe. (Corrugated Culvert.)
American Rolling Mill Co., Middletown, O.
Canton Culvert Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Gallon Iron Works Co., Gallon, O.
Harry Steel Co., O. K., St. Louis, Mo.
Kentucky Culvert Mfg. Co., Buechel, Ky.
New Carolina Metal Culv. Co., Greensboro, N. C.
Virginia Metal Culvert Co., Roanoke, Va.
Virginia Railway Supply Co., Norfolk, Va.

Pipe. (Riveted.)
Abendroth & Root Mfg. Co., Newburgh, N. Y.
Keebler Co., E., Williamsport, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Ruemmel-Dawley Mfg. Co., St. Louis, Mo.

Pipe. (Spiral Riveted.)
Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Spiral Pipe Works, Chicago, Ill.

Pipe. (Wood.)
Wyckoff & Son Co., A., Elmira, N. Y.

Pipe. (Wrought.)
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Pipe Bends.
Columbus Iron Works Co., Columbus, Ga.
Whitlock Coll Pipe Co., Hartford, Conn.

Pipe Covering. (Steam.)
Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.
Wyckoff & Son Co., A., Elmira, N. Y.

Pipe Cutting and Threading Machinery.
Saunders' Sons, D., Yonkers, N. Y.

Pipe Fittings.
American Cast Iron Pipe Co., Birmingham, Ala.
Columbus Iron Works Co., Columbus, Ga.
York Mfg. Co., York, Pa.

Pipe Jointing. (Gas and Water Main.)
Leadite Co., Inc., The, Philadelphia, Pa.

Pipe Locator.
Modern Iron Works, Quincy, Ill.

Pipe Unions and Joints.
Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburgh, Pa.
Whitlock Coll Pipe Co., Hartford, Conn.

Pipe Wrenches and Cutters.
Saunders' Sons, D., Yonkers, N. Y.

Pitch.
Barrett Mfg. Co., Philadelphia, Pa.

Planers. (Metal.)
Manning, Maxwell & Moore, Inc., New York, N. Y.

Planing Mill Work.
Massey & Felton Lumber Co., Macon, Ga.

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King & Co., J. B., New York, N. Y.

Plaster.
Security Cement & Lime Co., Baltimore, Md.

Plaster. (Asbestos Cement, Plaster of Paris.)
King & Co., J. B., New York, N. Y.

Plaster Boards.
Hercules Plaster Board Co., Hampton, Va.
King & Co., J. B., New York, N. Y.

Plaster Machinery.
Bartlett & Snow Co., C. O., Cleveland, O.

Plates.
Cincinnati Iron & Steel Co., Cincinnati, O.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Plugs. (Wall.)
Wicks Mfg. Co., Milton, O., Glen Cove, N. Y.

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Polishing Machinery. (Wheels and Blocks.)
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
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Power Transmission Machinery.
Bailey-Lebby Co., Charleston, S. C.
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
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Wolf Co., The, Chambersburg, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.

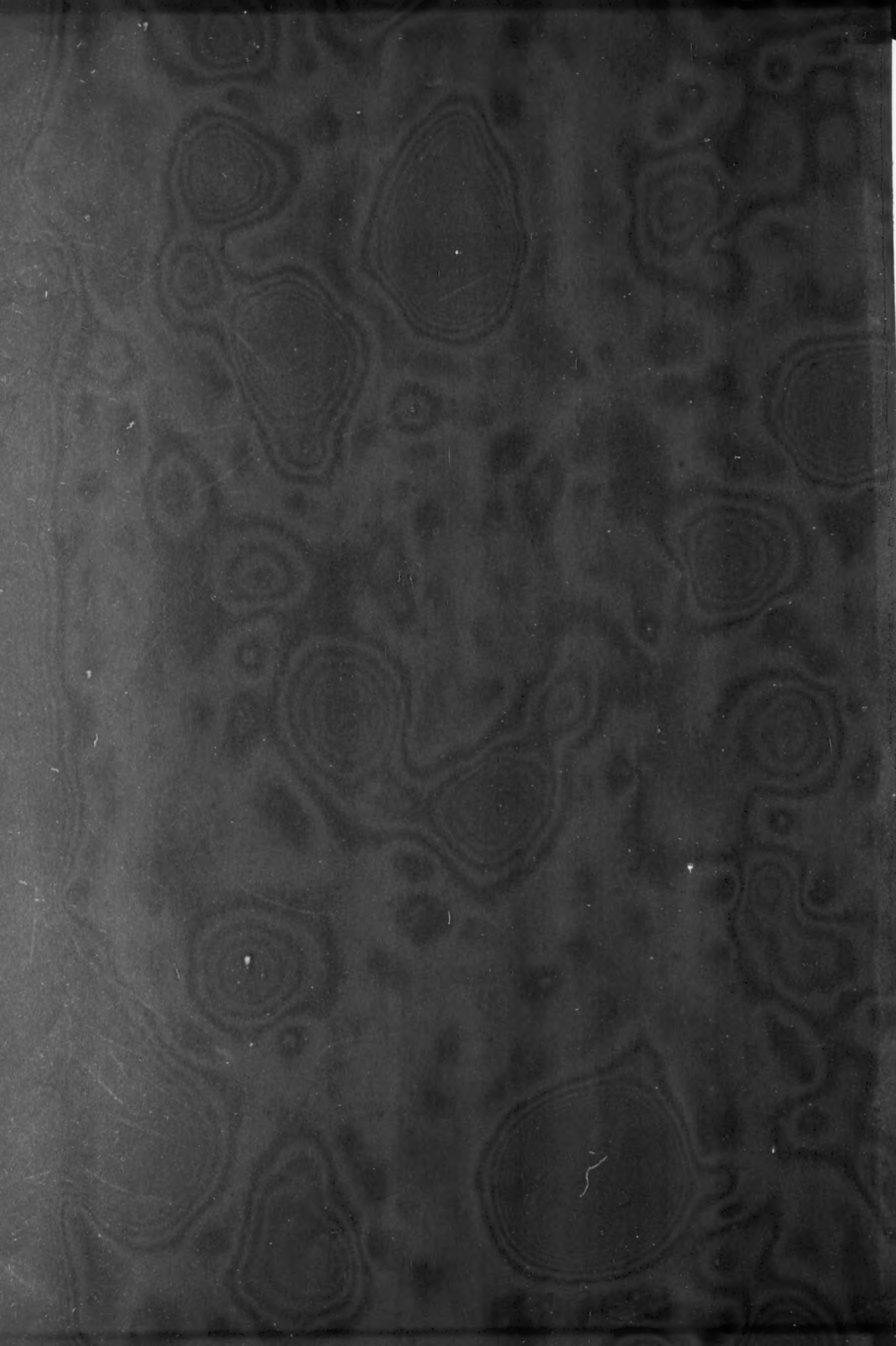
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Dean Steam Pump Co., Holyoke, Mass.
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McGowan Co., John H., Cincinnati, O.
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Sydnor Pump & Well Co., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Worthington, H. R., New York, N. Y.
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Goulds Mfg. Co., Seneca Falls, N. Y.
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Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
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Bond Co., Harold L., Boston, Mass.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Dean Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Erie Pump & Engine Works, Erie, Pa.
Fairbanks, Morse & Co., Chicago, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
McGowan Co., John H., Cincinnati, O.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
- Myers & Bros., F. E., Ashland, O.**
Norborn Engineering Co., Philadelphia, Pa.
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Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, H. R., New York, N. Y.
- Punching and Shearing Machinery.**
Bertsch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Long & Alstatt's Co., Hamilton, O.
Ryersford Foundry & Mach. Co., Ryersford, Pa.
- Pyrites Burners.**
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American Locomotive Co., New York, N. Y.
American Valve & Meter Co., Cincinnati, O.
Bailey-Lebby Co., The, Charleston, S. C.
Baldwin Equipment & Supply Co., Chicago, Ill.
Benjamin Equip. Co., Harry, St. Louis, Mo.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Boston Iron & Metal Co., Baltimore, Md.
Cincinnati Frog & Switch Co., Cincinnati, O.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hoffman & Co., R. C., Baltimore, Md.
Hyman-Michaels Co., Chicago, Ill.
Indiana Steel & Iron Co., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Maclear, J. H., Suffolk, Va.
Males Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
Maryland Equipment Supply Co., Baltimore, Md.
Mathes Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
National Iron & Steel Co., Houston, Tex.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Papin Co., R. K., St. Louis, Mo.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Q & C Co., New York, N. Y.
Read Co., Howard W., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
Southern Iron & Equipment Co., Atlanta, Ga.
Southern Supply Co., Norfolk, Va.
Steel Rail Supply Co., The, New York, N. Y.
United States Rail Co., Cumberland, Md.
Vulcan Iron Works, Wilkes-Barre, Pa.
Weir Frog Co., Cincinnati, O.
West Virginia Rail Co., The, Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Zeluckier Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs and Switches.**
American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Kilby Frog & Switch Co., Birmingham, Ala.
Mathes Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.
- Railroad Tie.** (Reinforced Concrete.)
Universal Concrete Tie Co., New Orleans, La.
- Rails.** (Steel.)
Baldwin Equipment & Supply Co., Chicago, Ill.
Carnegie Steel Co., Pittsburgh, Pa.
Foster Co., L. B., Pittsburgh, Pa.
Franks, J. E., Atlanta, Ga.
Hoffman & Co., R. C., Baltimore, Md.
Hyde Bros. & Co., Pittsburgh, Pa.
Hyman-Michaels Co., Chicago, Ill.
Indiana Steel & Iron Co., Pittsburgh, Pa.
Levis & Co., Henry, Philadelphia, Pa.
Maclear, J. H., Suffolk, Va.
Mathes Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
National Iron & Steel Co., Houston, Tex.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Ohio Iron & Metal Co., Chicago, Ill.
Papin Co., R. K., St. Louis, Mo.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., E. F. M. Ala.
United States Rail Co., Cumberland, Md.
West Virginia Rail Co., The, Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Zeluckier Supply Co., Walter A., St. Louis, Mo.
- Rail Braces, Crossings, etc.** [See R. R. Frogs and Switches.]
- Rail Joints.**
Q & C Co., New York, N. Y.
- Railways.** (Industrial.)
Chase, Fdry. & Mfg. Co., Columbus, O.
Hunt Co., C. W., West New Brighton, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Rams.** (Hydraulic.) [See Hydraulic Rams.]
- Reamers.**
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reflectors.**
Holophane Co., Newark, Ohio.
- Reinforcing Bars.**
Carnegie Steel Co., Pittsburgh, Pa.
Concrete Steel Co., New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
- Repairing.** (Power Plants.)
Strickland Mch. Co., Richmond, Va.
- Riveters.** (Pneumatic.)
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Road Machinery.**
Austin-Western Co., Ltd., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
Galion Iron Works Co., Galion, O.
Iroquois Iron Works, Buffalo, N. Y.
Kelly Springfield Road Roller Co., Springfield, O.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Troy, W. B., Jr., Memphis, Tenn.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
- Roadmaking Materials.**
Standard Oil Co., Inc., Louisville, Ky.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, New York, N. Y.
- Road Roller.** (Steam.)
Austin-Western Co., Ltd., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
Iroquois Iron Works, Buffalo, N. Y.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**
Gulf Refining Co., Pittsburgh, Pa.
Prime White Road Oil Co., Cincinnati, O.
Standard Oil Co., Inc., Louisville, Ky.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, New York, N. Y.
- Road Plows.**
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Road Preservatives.**
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Louisville, Ky.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, New York, N. Y.
- Rock Crushers.** [See Crushers, Rock.]
- Roll Grinding and Corrugating.** (Flour Mills.)
Veech & Co., L. R., Louisville, Ky.
- Rolls.** (Bending and Straightening.)
Bertsch & Co., Cambridge City, Ind.
- Roofers' and Tinner's Supplies.**
Merchant & Evans Co., Philadelphia, Pa.
- Roofing.** (Contractors for Laying.)
Diniaco & Bro., A., Pittsburgh, Pa.
- Roofing.** (Felt, Tar, Asbestos, Asphalt, Tin, etc.)
Allen, Herbert F. L., Washington, D. C.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armstrong Mfg. Co., Richmond, Va.
Asphalt Ready Roofing Co., New York, N. Y.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Johns-Manville Co., H. W., New York, N. Y.
National Roofing Co., Tonawanda, N. Y.
Standard Paint Co., New York, N. Y.
- Roofing.** (Metal Shingles.) [See Shingles, Metal.]
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing.** (Slate.)
East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Hower, J. K., Slattington, Pa.
Johnson, E. J., New York, N. Y.
Reynolds Asphalt Shingle Co., H. M., Grand Rapids, Mich.
- Roofing Tile.**
National Roofing Tile Co., Lima, O.
- Roofing and Siding.** (Metal.)
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hydman Roofing Co., Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
New Orleans Rfg. & Metal Wks., New Orleans, La.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope.**
American Mfg. Co., New York, N. Y.
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
International Cotton Mills Corp., New York, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
- Rope.** (Transmission and Hoisting.)
American Mfg. Co., New York, N. Y.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Caldwell Co., Inc., W. E., Louisville, Ky.
Columbian Rope Co., Auburn, N. Y.
Hunt Co., C. W., West New Brighton, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Drives.**
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son, H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Machinery.**
Haskell-Dawes Machine Co., Boston, Mass.
- Rubber Goods.**
Eureka Fire Hose Mfg. Co., New York, N. Y.
New Jersey Car Sp'g & Rub. Co., Jersey City, N. J.
- Rules.** (Steel.)
Larkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.
- Safes and Vaults.**
York Safe & Lock Co., York, Pa.
- Safety Appliances.** (For Elevator.)
Roth Elevator Safety Co., Inc., Baltimore, Md.
- Sand.**
Arundel Sand & Gravel Co., Baltimore, Md.
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.
Lathrop & Co., C. F., Richmond, Va.
- Sand Rammers.**
Chicago Pneumatic Tool Co., Chicago, Ill.
- Sap Stain Preventive.**
Church & Dwight Co., New York, N. Y.
- Sash Chain.**
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**
Gerlach Co., Peter, Cleveland, O.
Hutcher Bros. Saw Mfg. Co., Rochester, N. Y.
Smith Machine Co., H. B., Smithville, N. J.
Sydnor Pump & Well Co., Richmond, Va.
- Saws.** (Band.)
Smith Machine Co., H. B., Smithville, N. J.
- Saws.** (Hack.)
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**
Gainesville Iron Works, Gainesville, Ga.
Gibbs Machinery Co., Columbia, S. C.
- Sawmill Machinery.**
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Turbine Mfg. Co., Orange, Mass.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Price Mch. Co., S. M., Norfolk, Va.
Schiffeld's Sons Co., J. S., Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Sydnor Pump & Well Co., Richmond, Va.
Union Iron Works Co., Selma, Ala.
- Saw Sharpeners.**
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files.** (Cotton Gln.)
Carver Cotton Gln Co., East Bridgewater, Mass.
- Scales.**
Howe Scale Co., New York, N. Y.
Rome Scale & Mfg. Co., Rome, Ga.
Standard Scale & Supply Co., Pittsburgh, Pa.
- Screening Apparatus.**
Walker & Elliott, Wilmington, Del.
- Screens.** (Fly, Window and Door.)
Cincinnati Mfg. Co., Cincinnati, O.
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens.** (Mining.)
Cresson Co., Geo. V., Philadelphia, Pa.
Cross Engineering Co., Carbondale, Pa.
Erie Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
Mundt & Sons, Charles, Jersey City, N. J.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
New Jersey Wire Cloth Co., Trenton, N. J.
Taplin-Rice-Clerkin Co., Akron, O.
- Searchlights.**
Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators.** (Dust.)
Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Sewer Pipe Machinery.**
Taplin-Rice-Clerkin Co., Akron, O.
- Sewer Pipe.** (Vitrified.)
Rubb Sewer Pipe Co., Macon, Ga.
Cannerton Sewer Pipe Co., Cannerton, Ind.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Pomona Terra-Cotta Co., Pomona, N. C.
Stevens Sons Co., H., Macon, Ga.
- Shades.**
Holophane Co., Newark, Ohio.
- Shafting.** (Polished Steel.)
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
- Shafting.** (See Pulleys, Shafting and Hangers.)
- Shapers.**
Stephens Shaper Co., John, Cincinnati, O.
- Sharpening Stones.**
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Shears.** (Metal.)
Bertsch & Co., Cambridge City, Ind.
Ryersford Fdry. & Mach. Co., Ryersford, Pa.
Stoll Co., D. H., Buffalo, N. Y.
- Sheet Brass and Copper.**
Hussey & Co., C. G., Pittsburgh, Pa.
Merchant & Evans Co., Philadelphia, Pa.
- Sheet Metal Working Machinery.**
Bertsch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
Le Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., E. F. M. Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Shingles.** (Asphalt Slate.)
Reynolds Asphalt Shingle Co., H. M., Grand Rapids, Mich.
- Shingles.** (Metal.)
Burriss & Co., John T., Anderson, S. C.
Chattanooga Rfg. & Fdy. Co., Chattanooga, Tenn.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hydman Roofing Co., Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Shipping Tags.**
Dennison Mfg. Co., Boston, Mass.
- Shredders.** (Bark, Chip, etc.)
Williams Pat. Crush. & Pul. Co., The, Chicago, Ill.
- Shutters.** (Iron.)
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
- Shutters.** (Steel Rolling.)
Kinneer Mfg. Co., Columbus, O.
- Shutters.** (Tin Clad.)
Victor Mfg. Co., Newburyport, Mass.
- Signs.** (Metal Lithographed.)
Southern Can Co., Baltimore, Md.
- Signs.** (Road, Street, Outdoor, Advt.)
Indestructible Sign Co., Columbus, O.
- Sightlights and Cornices.**
Milwaukee Corrugating Co., Milwaukee, Wis.
New Orleans Rfg. & Metal Wks., New Orleans, La.
- Slate Roofing.** [See Roofing (Slate).]
- Slate.** (Structural, Sanitary, etc.)
East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Hower, J. K., Slattington, Pa.
- Sluice Gates and Appliances.**
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks.** (Iron and Steel.)
Chattanooga Boiler & Tank Co., Chat'n'gs, Tenn.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Petroleum Iron Works Co., Sharon, Pa.
Ruemmel-Dawley Mfg. Co., St. Louis, Mo.
Schiffeld's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.
- Smokestacks.** (Steel-Concrete.)
Weber Chimney Co., Chicago, Ill.

- Spikes. (Railroad.)**
Hoffman & Co., R. C., Baltimore, Md.
West Virginia Rail Co., The, Huntington, W. Va.
Spikes. [See Nails and Spikes.]
- Springs. (Machinery, Railway, Spiral.)**
American Steel & Wire Co., Chicago, Ill.
Cary Spring Works, New York, N. Y.
Raymond Mfg. Co., Ltd., Corry, Pa.
- Sprinklers. (Automatic.)**
General Fire Extinguisher Co., Providence, R. I.
- Sprinkler Systems. (Automatic.)**
General Fire Extinguisher Co., Providence, R. I.
- Stamp Mills.**
Mecklenburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**
Baltimore Office Supply Co., Baltimore, Md.
Bennett Rubber Stamp & Seal Co., Atlanta, Ga.
- Standpipes.**
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Des Moines Bridge & Iron Co., Pittsburgh, Pa.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Reumell-Dawley Mfg. Co., St. Louis, Mo.
- Stapling Machinery. (Fruit Package Basket, etc.)**
Karnes Machine Co., St. Joseph, Mich.
- Stationers. (Envelopes, Letter and Bills Heads, etc.)**
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**
Boyle Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**
Kauers' Sons, D., Yonkers, N. Y.
- Steam Heating.**
Keeler Co., E., Williamsport, Pa.
Fack-Hammond Co., The, Cincinnati, O.
- Steamship Lines.**
Baltimore Steam Packet Co., Baltimore, Md.
Chesapeake Steamship Co., Baltimore, Md.
Merchant & Miners' Trans. Co., Baltimore, Md.
- Steam Separators.**
Boppes Mfg. Co., Springfield, O.
Lindstrom's Mach. Wks., John T., Allentown, Pa.
- Steam Shovel Chains.**
Standard Chain Co., Pittsburgh, Pa.
Weimer Chain & Iron Co., Lebanon, Pa.
- Steam Shovels. [See Excavating Machinery.]**
- Steam Specialties.**
Kennedy Valve Mfg. Co., Elmira, N. Y.
Fowell Co., Wm., Cincinnati, O.
- Steam Traps.**
American Blower Co., Detroit, Mich.
Jenkins Bros., New York, N. Y.
Lindstrom's Mach. Wks., John T., Allentown, Pa.
Pratt & Cady Co., Hartford, Conn.
- Steel.**
American Rolling Mill Co., Middletown, O.
Dietrich Bros., Baltimore, Md.
Field & Co., Inc., Philadelphia, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Steel. (Tool.)**
Field & Co., Inc., Philadelphia, Pa.
Jessops & Sons, Inc., Wm., St. Louis, Mo.
- Steel. (Vanadium.)**
Carnegie Steel Co., Pittsburgh, Pa.
- Steel Buildings. (Designers, Builders.)**
Amer. Bridge Co. of New York, New York, N. Y.
Champion Bridge Co., Wilmington, Ohio.
Chesapeake Iron Works, Baltimore, Md.
Farrie Bridge Co., Pittsburgh, Pa.
Phoenix Iron Co., Philadelphia, Pa.
Roanoke Bridge Co., Roanoke, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Sheed Architectural Iron Works, Louisville, Ky.
Virginia Bridge & Iron Co., Roanoke, Va.
- Steel Casting.**
Acme Steel & Malleable Iron Wks., Buffalo, N. Y.
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Heliace Steel Casting Co., Pittsburgh, Pa.
- Steel Plate Work.**
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Hoffman & Co., R. C., Baltimore, Md.
Phoenix Iron Co., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Richmond Eng. & Mfg. Co., Richmond, Va.
Reumell-Dawley Mfg. Co., St. Louis, Mo.
- Steel Protector. (Concrete Curb Steps, etc.)**
[See Protector Steel.]
- Steel Sheet Piling.**
Jones & Laughlin Steel Co., Pittsburgh, Pa.
- Stencils.**
Baltimore Office Supply Co., Baltimore, Md.
- Stirrups. (Building.)**
Chesapeake Iron Works, Baltimore, Md.
- Stock Certificates, Bonds and Seals.**
Baltimore Office Supply Co., Baltimore, Md.
- Stokers. (Mechanical.)**
Babcock & Wilcox Co., New York, N. Y.
Harrisburg Fdry. & Mach. Wks., Harrisburg, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.
- Storage Batteries.**
Edison Storage Battery Co., Orange, N. J.
Eis. Electric Co., The, Philadelphia, Pa.
Lee Electric Co., Baltimore, Md.
Westinghouse Machine Co., Pittsburgh, Pa.
- Strainers.**
Cameron Steam Pump Wks., A. S., New York, N. Y.
- Structural Steel and Iron.**
Amer. Bridge Co. of New York, New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Champion Bridge Co., Wilmington, Ohio.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Pittsburgh, Pa.
Dietrich Bros., Baltimore, Md.
- Hoffman & Co., R. C., Baltimore, Md.**
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Memphis Bridge Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Roanoke Bridge Co., Roanoke, Va.
Roanoke Iron Works, Inc., Roanoke, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Sheed Architectural Iron Works, Louisville, Ky.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
York Bridge Co., York, Pa.
- Stump Pullers.**
Zimmerman Steel Co., M. R., Lone Tree, Ia.
- Sugar-Mill Machinery.**
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Sulphur.**
Union Sulphur Co., New York, N. Y.
- Super-Heaters. (Steam.)**
Babcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.
- Surveying Instruments.**
Keuffel & Esser, Hoboken, N. J.
Weber & Co., F., Philadelphia, Pa.
- Switchboards, Switches, etc.**
Engberg's Elect. & Mech. Wks., St. Joseph, Mich.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Westinghouse Elect. & Mfg. Co., Pittsburgh, Pa.
- Switches. [See Railroad Frogs and Switches.]**
- Switchstands.**
American Valve & Meter Co., Cincinnati, O.
Weir Frog Co., Cincinnati, O.
- Tackle Blocks. (For Wire or Manila Rope.)**
Patterson Co., W. W., Pittsburgh, Pa.
- Tags.**
Dennison Mfg. Co., Boston, Mass.
- Tanks. (Iron and Steel.)**
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
Case Threshing Mach. Co., Inc., J. I., Racine, Wis.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Pittsburgh, Pa.
Gem City Boiler Co., Dayton, O.
Harry Bros. Co., Newport, Ky.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
New Orleans Iron & Met. Wks., New Orleans, La.
Oil City Boiler Co., Oil City, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Reumell-Dawley Mfg. Co., St. Louis, Mo.
Seafie & Sons Co., Wm. B., Pittsburgh, Pa.
Schnefeld's Sons Co., J. S., Macon, Ga.
Sydnor Pump & Well Co., Richmond, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weldner Boiler Co., Chattanooga, Tenn.
- Tanks. (Wood.)**
Baltimore Cooperage Co., Baltimore, Md.
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Sydnor Pump & Well Co., Richmond, Va.
- Tapes. (Measuring.)**
Keuffel & Esser, Hoboken, N. J.
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.
- Telephones. (Supplies, Equipment.)**
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.
- Telephone Cable.**
Western Electric Co., New York, N. Y.
- Telephone Poles. [See Crosssties.]**
Intern'l. Crec. & Constr. Co., Galveston, Tex.
Western Electric Co., New York, N. Y.
- Terracotta.**
Atlanta Terra-Cotta Co., Atlanta, Ga.
Bibb Sewer Pipe Co., Macon, Ga.
Maryland Terra-Cotta Co., Baltimore, Md.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.
- Threshers.**
Cardwell Machine Co., Richmond, Va.
Case Threshing Mach. Co., Inc., J. I., Racine, Wis.
- Tie Plates. (Railways.)**
Virginia Railway Supply Co., Norfolk, Va.
- Tile. (Drain, Floor, etc.)**
Amer. Enam. Brick & Tile Co., New York, N. Y.
Bibb Sewer Pipe Co., Macon, Ga.
Oconee Brick & Tile Co., Milledgeville, Ga.
- Tile. (Mosaic.)**
Dagostin & Angelini Bros., Montgomery, Ala.
- Tile. (Roofing.)**
National Roofing Tile Co., Lima, O.
- Tin and Terne Plates.**
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Merchant & Evans Co., Philadelphia, Pa.
- Tobacco Machinery.**
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.
- Tool Steels.**
Jessops & Sons, Inc., Wm., St. Louis, Mo.
- Tools. (Machinists.)**
Manning, Maxwell & Moore, Inc., New York, N. Y.
Morse Twist Drill & Mach. Co., New Bedford, Mass.
- Tools. (Mechanical.)**
Starrett Co., L. S., Athol, Mass.
- Tools. (Pneumatic.)**
Amer. Compressor & Pump Co., Baltimore, Md.
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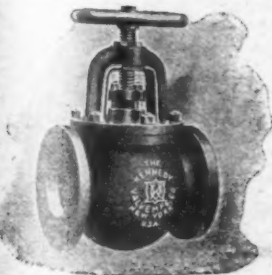


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